

THE
HEMIPTERIST

A JOURNAL ON THE NATURAL HISTORY
OF THE HEMIPTERA OF THE BRITISH ISLES



Volume 2 (2015)

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Cover photograph: *Cyphostethus tristriatus* (Fabricius) (Hemiptera: Acanthosomatidae).

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**AN ADDENDUM TO THE COUNTY DISTRIBUTION OF THE
HEMIPTERA-HETEROPTERA OF THE BRITISH ISLES, FOURTH EDITION**

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I have become aware of some deficiencies in the recently published fourth edition of the county distribution of the Hemiptera-Heteroptera of the British Isles (Ryan, 2014), which I here correct.

The appendix to the fourth edition is supposed to explain the fate of all the records of the third edition (Massee, 1955), in the process of updating the county distribution. Some species had changed name, and for every one of Massee's species names the new name for his records is stated. Where records had been deleted because of doubt over the identity of records, these were indicated as such, with the reference(s) cited that forced the action. Massee included subspecies and varieties in his distribution, which Ryan did not. Some of these are now regarded as separate species, but where this was not the case, and they had not already been subject to deletions, the multiple sets of records for each species were merged, with the loss of the duplicate records. These mergers were indicated simply by giving the same, new species name for each of the involved forms.

However, of the 709 records deleted from Massee's distribution, in the compilation of the fourth edition, there are still eight unaccounted for by the above, which arose from other issues, not documented in the appendix. For completeness, details of these deletions are given below.

Lamproplax picea (Flor) (Lygaeidae) (Massee: 135. *D. piceus*), record for Kent (Side, 1962).

Temnostenus gracilis Horváth (Anthocoridae) (Massee: 200. *T. gracilis*), records for Buckinghamshire, Kent and Cornwall. (Given the comments of Woodroffe (1961), all Massee's records for this genus were deleted and replaced with the authenticated records of Le Quesne (1955).)

Amblytylus delicatus (Perris) (Miridae) (Massee: 377. *Ambly. delicatus*), record for Bedfordshire (Leston, 1960).

Orthotylus flavinervis (Kirschbaum) (Miridae) (Massee: 341. *O. flavinervis*), record for Bedfordshire (Leston, 1960).

Microvelia pygmaea (Dufour) (Veliidae) (Massee: 434. *Micro. pygmaea*), records for Norfolk and Oxfordshire (Brown, 1954).

There were also records published subsequent to Massee (1955) which were later reported as incorrect. In order to show that these records have not been overlooked, I list them below.

Peribalus strictus (Fabricius) (Pentatomidae) added for Carmarthenshire by Nau (1984 & 1995) and for Bedfordshire by Nau (1995). Both records deleted by Nau (2003).

Loricula exilis (Fallén) (Microphysidae), added for Oxfordshire by Woodroffe (1962) and deleted by Woodroffe (1963).

Adelphocoris seticornis (Fabricius) (Miridae) added for Glamorgan by Kirby (1993) and deleted by Kirby (1996).

Chlamydatus evanescens (Boheman) (Miridae) added for Dorset by Nau & Brooke (2006a) and deleted by Nau & Brooke (2006b).

Lygus punctatus (Zetterstedt) (Miridae), added for Radnorshire by Leston (1958) and for Herefordshire by Massee (1964). Both records deleted by Woodroffe (1966).

Macrolophus pygmaeus (Rambur) (Miridae) added for Ireland by O'Connor & Nelson (2012) and deleted by Nelson (2014).

Orthotylus caprai Wagner (Miridae) added for Surrey by Hodge (2009) and deleted by Hodge (2014).

Finally, and mercifully, I bring this tedious article to a close with an explanation for why four species in the new county distribution have no county records. In the cases of *Carpocoris*

mediterraneus Tamanini (Pentatomidae) (Bantock, 2014), *Lygaeus equestris* (Linnaeus) (Lygaeidae) (Judd, 1996) and *Loricula ruficeps* (Reuter) (Microphysidae) (Ryan, 2012) it is because details of their British statuses have yet to be published with sufficient detail to assign their records to specific counties. In the case of *Physatocheila confinis* Horváth (Tingidae) it is because this species has always been recorded in Britain as an aggregate with *Physatocheila dumetorum* (Herrich-Schaeffer), the two species being inseparable here (Aukema & Rieger, 1995-2006). All records for this complex are reported as the latter species, and the former is included in the county distribution for completeness ... and to flag up the need for a separation!

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SOME BRIEF COMMENTS ON THE DISSECTION OF MALE GENITALIA OF THE HEMIPTERA-HETEROPTERA

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Until recently, I shied away from dissection, even though an examination of male genitalia is essential for the separation of many species of the Hemiptera-Heteroptera. Whenever I came across a description of the process, such as in Southwood & Leston (1959), it involved the use of hazardous chemicals, like hot potassium hydroxide and glacial acetic acid, in order to remove soft tissues from the genital capsule. As an amateur entomologist with no laboratory facilities, but who trained as a biochemist, I decided that this kind of chemistry should not be done at the kitchen sink. Consequently, unless the relevant genital anatomy was visible externally, I didn't bother with it. This led to a growing discontent, as my collection of unidentified specimens became ever larger.

So, in 2014, I decided to act. Reasoning that I did not need the whole genital capsule to be intact, only the isolated vesica or parameres, I started dissecting without chemical assistance. With fresh material, I found this surprisingly easy, and with dried material I needed only to leave the capsule on damp tissue paper for a few hours, or overnight, before I could dissect. Presumably, the aforementioned chemicals are necessary in cases where the intact capsule is required or where the genital structures are too delicate to be separated from soft tissues mechanically. However, so far, I have had no problems operating chemical-free with the true bugs.

On the subject of hazardous chemicals, I have long avoided using solvents to kill insects, preferring carbon-dioxide, generated from a mixture of sodium bicarbonate and citric acid (Ryan, 1989). In recent years, I have simply brought the insects home alive and put them in the freezer. After three or four hours, the specimens can be thawed at room temperature and pinned immediately. For carding, where relaxed material is required, the specimens are left in the refrigerator overnight, and can be set the following morning.

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**AN ANNOTATED CHECKLIST OF THE AMBIGUOUS SPECIES NAMES
OF HEMIPTERA-HETEROPTERA SINCE MASSEE (1955)**

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There are a number of instances in the British Hemiptera-Heteroptera where a species name has been found to refer to what are now regarded as multiple, separate species. When gathering published records for the new county distribution (Ryan, 2014b), I had to take particular care with these ambiguities, and drew up a checklist of the ambiguous names, so that records involving them could be readily identified and dealt with appropriately. Obviously, records dated prior to the discovery of an ambiguity should be disregarded, unless authenticated by a specimen.

In case this checklist is of use to other workers who have to deal with past records, I present an annotated version of it below. The list only includes ambiguities that have arisen since Massee (1955), as this was the scope of my work on the new county distribution. Older records may be subject to further ambiguities, some of which are documented by Massee.

PENTATOMIDAE

Carpocoris pudicus (Poda)

There are no authenticated British specimens of this species, and records for the insect have long been regarded as probably referring to either *Carpocoris mediterraneus* (Tamanini) or *Carpocoris purpureipennis* (De Geer). Authenticated British records now exist for both of these species (Bantock, 2014; Ryan, 2014b), but not *C. pudicus*.

Nezara viridula (Linnaeus)

This species is not ambiguous in its name but in the origin of its records. It was formerly found in Britain only in association with imported produce, and was not therefore regarded as a British species (Southwood & Leston, 1959). However, it has since established itself in these islands (Barclay, 2004), and recent records are acceptable, if of natural origin.

RHOPALIDAE

Stictopleurus abutilon (Rossi)

Stictopleurus punctatonervosus (Goeze)

Old records for this formerly rare genus were reported under several names, only the above two of which have been found to apply to British specimens in collections (Dolling, 1978). In the 1990s, these two species became established in Britain, and they have now been recorded in many English counties (Ryan, 2014b). It is not clear from Dolling's work under what names the specimens he identified were standing, and therefore whether the above two species have been confused with each other. However, it is perhaps prudent to disregard old records for this genus, unless authenticated by a specimen.

LYGAEIDAE

Eremocoris fenestratus (Herrick-Schaeffer)

Woodroffe (1962) added *Eremocoris abietis* (Linnaeus) to the British list when he found specimens of this species standing as *E. fenestratus* in collections. Clearly the two species had been confused in the past, and old records are of doubtful identity.

Lygaeus equestris (Linnaeus)

Ambiguity arose with this species when a British specimen, standing as *L. equestris*, was found to be the recently separated *Lygaeus simulans* Deckert (Judd, 1996). Consequently, old records for this genus must be authenticated by a specimen.

Megalonotus chiragra (Fabricius)

The name of this species became ambiguous when a subspecies was raised to specific rank, adding *Megalonotus sabulicola* (Thomson) to the British list (Southwood, 1963). Further confusion arose when *Megalonotus emarginatus* (Rey) was separated (Aukema & Nau, 1992).

Nysius thymi (Wolff)

The addition of *Nysius ericae* (Schilling) to the British list by Woodroffe (1959) rendered prior records for the similar *N. thymi* doubtful. Four more species of *Nysius* Dallas have been found in Britain in recent decades (Ryan, 2012), but there is no published evidence, as yet, that they have been confused with the existing species, or with each other.

Trapezonotus arenarius (Linnaeus)

The first separation in the British literature of all three species in this complex (*Trapezonotus arenarius* (Linnaeus) *sensu stricto*, *Trapezonotus desertus* Seidenstücker and *Trapezonotus dispar* Stål) was that of Woodroffe (1960a). Massee (1955) listed two of the forms, *T. arenarius* and *T. dispar*, and Southwood & Leston (1959) described all three forms under the single name of *T. arenarius*. Woodroffe regarded the characters previously used in the British literature as unreliable for separation, and reported confusion amongst the identity of British specimens in collections (Woodroffe, 1960a & 1960b).

TINGIDAE

Physatocheila dumetorum (Herrich-Schaeffer)

This species is recorded in Britain as an aggregate with *Physatocheila confinis* Horváth, the two being inseparable here (Aukema & Rieger, 1995-2006). British records for *P. dumetorum* could refer to either species, but accepted practice is to assign all records to *P. dumetorum*.

REDUVIIDAE

Coranus subapterus (De Geer)

The separation of *Coranus woodroffei* P.V. Putshkov from this species in the 1980s has only recently received publicity in the British literature (Ryan, 2012 & 2014a). A third species of this genus, *Coranus aethiops* Jakovlev, which could have been confused with *C. subapterus*, has also now been recorded in Britain (Foster, 2013).

ANTHOCORIDAE

Anthocoris minki Dohrn

This species was listed in Massee (1955) and Southwood & Leston (1959) based upon a misidentification. The correct name for the insect is *Anthocoris simulans* Reuter (Jessop, 1983).

The real *A. minki* was added to the British list by Jessop.

Orius minutus (Linnaeus)

Woodroffe (1971) added *Orius laticollis* (Reuter) and *Orius vicinus* (Ribaut) to the British list, these species having been found amongst specimens standing as *O. minutus* in collections. (*O. vicinus* was regarded as a foreign species by Southwood & Leston (1959), and Massee (1955) did not list it, in spite of there being a British record (Massee, 1954)). There are no published accounts of authenticated specimens of *O. minutus* having been found in Britain, and it is not therefore included in the British list.

Temnostethus pusillus (Herrich-Schaeffer)

Le Quesne (1955) separated *Temnostethus gracilis* Horváth from this species in Britain, and the identity of previous records became doubtful. Subsequently, the similar *Temnostethus tibialis* Reuter was identified in Britain (Woodroffe, 1971a), but there is no published evidence, as yet, of its confusion with the other two species.

MIRIDAE

Lygus pratensis (Linnaeus)

Lygus rugulipennis Poppius, formerly *Lygus pubescens* Reuter, was separated from this complex of species in Britain by Leston (1951), but confusion remained amongst the other members: *Lygus maritimus* Wagner, *Lygus pratensis* (Linnaeus) *sensu stricto*, *Lygus punctatus* (Zetterstedt) and *Lygus wagneri* Remane. Southwood & Leston (1959) separated these, but Woodroffe (1966b) reported recently misidentified specimens, and presented an improved key.

Macrolophus pygmaeus (Rambur), formerly *Macrolophus nubilis* (Herrich-Schaeffer)

Woodroffe (1956 & 1957b) separated *Macrolophus rubi* Woodroffe from this species, and the identity of all previous records became doubtful (Southwood & Leston, 1959).

Monosynamma bohemanni (Fallén)

Woodroffe (1967) presented the first British separation of this complex of species, adding *Monosynamma maritimum* (Wagner) and *Monosynamma sabulicola* (Wagner) to the British list. However, the reliability of this separation has recently been questioned (Nau, 2000).

Notostira erratica (Linnaeus)

The *N. erratica* of Massee (1955) is actually *Notostira elongata* (Geoffroy) (Southwood & Leston, 1959). However, Woodroffe (1977) reported finding specimens of the former insect in collections, confirming it as a British species.

Orthops campestris (Linnaeus)*Orthops kalmii* (Linnaeus)

The addition of *Orthops basalis* (A. Costa) to the British list revealed that both it and *O. campestris* had been confused with *O. kalmii* in British collections (Woodroffe, 1973).

Plagiognathus albipennis (Fallén)

Dolling (1999) was the first British report of the confusion over the identity of this species. The name had been applied to three different species, two of which are found in Britain: *Europiella artemisiae* (Becker) and *Europiella decolor* (Uhler). *P. albipennis* was thereby deleted from the British list.

Psallus betuleti (Fallén)

Nau (2007) was the first British report of the ambiguity of this species name, caused by the raising to specific rank of a subspecies, adding *Psallus montanus* Josifov to the British list.

Psallus confusus Rieger, formerly *Psallus diminutus* (Kirschbaum)

Woodroffe (1957a) added *Psallus mollis* (Mulsant & Rey), as *Psallus masseei* Woodroffe, to the British list when it was found amongst specimens standing as the above species. Given that the two animals occur on the same host plant and are indistinguishable externally, previous records of *P. confusus* are of doubtful identity.

Psallus quercus (Kirschbaum)*Psallus variabilis* (Fallén)

Woodroffe (1957a) reported general confusion in Britain over the species of subgenus *Hylopsallus* Wagner, only the above two species of which being recognised as British at that time. (*P. quercus* now resides in subgenus *Phylidea* Reuter.) Woodroffe's study of the problem added three species to the British list: *Psallus assimilis* Stichel, *Psallus perrisi* (Mulsant & Rey) and *Psallus wagneri* Ossiannilsson; and the identity of old records of *P. quercus* and *P. variabilis* thereby became doubtful. Massee (1959) concurs.

Trigonotylus ruficornis (Geoffroy)

Aukema & Nau (1992) added *Trigonotylus caelestialium* (Kirkaldy) to the British list when British specimens, standing as *T. ruficornis*, were discovered in collections. It has since been widely recorded in England (Ryan, 2014b), casting doubt over the identity of earlier records of *T. ruficornis*.

SALDIDAE

Salda morio Zetterstedt*Salda muelleri* (Gmelin)

Scudder (1958) reported that these two species had been confused, and provided new distributions for them based upon records authenticated by specimens in collections.

Saldula pallipes (Fabricius)*Saldula palustris* (Douglas)

The similarity of these two species is evident from Southwood & Leston (1959), which keyed and described them together. Subsequently, Woodroffe (1966a) provided a separation.

CORIXIDAE

Sigara striata (Linnaeus)

The *S. striata* of Massee (1955) is largely *Sigara dorsalis* (Leach) (Southwood & Leston, 1959). Southwood & Leston described the distribution of *S. striata*, at that time, as being confined to the south coast of Kent and Sussex, whereas *S. dorsalis* was widely distributed.

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GRYPOCORIS STYSI (WAGNER) (HEMIPTERA: MIRIDAE) NEW TO HAMPSHIRE

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No, this is not a misprint! Once I had compiled the new county distribution for the Hemiptera-Heteroptera (Ryan, 2014), I was astonished to find that there was no published record in the national literature for the common capsid bug *Grypocoris stysi* (Wagner) (Miridae) from Hampshire, an intensively studied county. There was no specimen in my collection from this county so, on 9th July 2014, I set off from Oxford, south down the A34. Once over the border between Berkshire and Watsonian North Hampshire (VC12), I set to work with my sweep net, quickly recording the bug from three sites: Great Pen Wood, Penwood (National Grid Reference SU452621); the North Downs near Kingsclere (SU492566); and a bridleway near Burghclere (SU473592). I also beat several oak trees, *Quercus* spp. (Fagaceae), in the hope of finding another common capsid bug absent from Ryan's list for Hampshire, *Deraeocoris lutescens* (Schilling) (Miridae). Alas, probably because I mostly find this species in the spring and late summer, none were found.

I can therefore report that *G. stysi* is new to Hampshire, and that one of the many gaps in the county distribution has now been filled.

Reference

Ryan, R. P. 2014. The county distribution of the Hemiptera-Heteroptera of the British Isles, fourth edition. *Hemipterist* **1**: 38-103.

THE FURTHER DEVELOPMENT OF THE COUNTY DISTRIBUTION OF THE HEMIPTERA-HETEROPTERA OF THE BRITISH ISLES

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Introduction

County recording is the traditional method for studying biogeography in the British Isles. One of the first activities usually undertaken by a naturalist is to compile a list of the species residing in his vicinity, and a county is often seen as a conveniently-sized area upon which to focus his attention. These county records can be easily assembled to provide a national distribution. When describing a species, its distribution can be presented as a list of the counties from which it has been recorded. These data can also be tabulated or depicted as distribution maps, to allow the patterns of geographic distribution to be more easily visualised.

During the last half century there has been an increasing use of National Grid References in specifying the location of records, and this has allowed the use of grid squares as an alternative to counties as the basis for distributional studies. At a national level this involves the use of hectads, 10km squares. This approach provides much greater precision, but has the disadvantage of not being able to incorporate old county records, which often cannot be assigned to particular grid squares.

For the Hemiptera-Heteroptera, county lists have been used in the species accounts of Butler (1923), Southwood & Leston (1959) and Kirby (1992). There have been four editions of tabulated county records (Butler, 1923; Bedwell, 1945; Massee, 1955; Ryan, 2014a) and the last two editions have been depicted as sets of distribution maps (Ryan, 2013 & 2014b). These tables and maps are comprehensive, covering the entire British list. In contrast, hectad-plotted distribution maps have so far only been published for the water bugs (Huxley, 2003), a group comprising just 12% of the species of Hemiptera-Heteroptera found in the British Isles.

In the future, when records based upon grid references have accumulated sufficiently, hectad-plotted distribution maps will hopefully be available for all British bugs. However, at present, county-based recording is the only means of documenting the geographic distribution of all the Hemiptera-Heteroptera. Consequently, this journal will continue to advance this method, towards the publication of a fifth edition of the county distribution, with an updated atlas, before the end of the present decade. This article sets out the work that will be done towards this end.

The addition of missing records

Distributional studies are never complete, and new records are continually sought. However, other than the obvious need to continually add new records, the fourth edition is incomplete in three particular respects. First, the multitude of deletion events (such as those arising from species confusions (Ryan, 2015) that have occurred since the previous edition has led to many records being lost, and a number of species are therefore now seriously under-recorded. Second, the six decade gap between the third and fourth editions resulted in a long period when it was difficult to ascertain whether an interesting record was or was not new to a county (Eversham, 1983). This, inevitably, frustrated county recording, and has left many gaps which need to be filled. Third, the compilation of the new county distribution was confined to national publications for its source of new records, and there will be many valuable records in local publications which have yet to be included.

To tackle these issues, a great deal of work needs to be done in the library, in the field and with existing collections. Much of my own work will be published in the pages of this journal, and there will also be an annual 'county record roundup' of records published elsewhere. In this way, this journal will become a comprehensive account of all the work conducted towards the fifth edition. This will make it easier to check putative new county records, in the period between the publication of the fourth and fifth editions; and for someone else to continue the project from where I left off, in the event of my untimely and unforeseen demise.

The move to vice-counties

The geographic basis of the county distribution needs to move from historic counties to vice-counties. Table 1 shows the correspondence between the geographical regions used by the county distribution and the vice-counties of the British Isles. For those regions which correspond to a single vice-county, the move should be reasonably straightforward, involving a simple transfer of the species list for the historic county to the corresponding vice-county; although the existence of small boundary deviations may cause minor errors (see Ryan (2014c) for an example). However, where an historic county corresponds to multiple vice-counties, the transfer of records is much more difficult to achieve. In these cases, the locations of the records for each species in the county list must be traced with sufficient precision to allow their allocation to the correct vice-county. This is easy to do for those records added to the county distribution by Ryan (2014a), as references are cited for every new record. However, the records of Massee (1955) are not referenced, and where these cannot be traced it will not be possible to allocate them to any of the constituent vice-counties, and they will have to be deleted from the county distribution. Clearly, in order to avoid the loss of large numbers of records, county divisions must be particularly thorough, so that at least one vice-county can be found for as many species as possible.

TABLE 1. The vice-counties corresponding to the geographic regions of the county distribution.

GEOGRAPHIC REGION	VICE-COUNTIES	GEOGRAPHIC REGION	VICE-COUNTIES
Northumberland	67 & 68	Hertfordshire	20
Cumberland	70	Middlesex	21
Durham	66	Essex	18 & 19
Westmoreland	69	Kent	15 & 16
Yorkshire	61 - 65	Surrey	17
Lancashire & Isle of Man	59, 60, 69 & 71	Sussex	13 & 14
Cheshire	58	Berkshire	22
Shropshire	40	Hampshire & Isle of Wight	10, 11 & 12
Staffordshire	39	Wiltshire	7 & 8
Derbyshire	57	Dorset	9
Nottinghamshire	56	Somerset	5 & 6
Leicestershire	55	Devonshire	3 & 4
Rutland	55	Cornwall	1 & 2
Lincolnshire	53 & 54	Flintshire	51
Norfolk	27 & 28	Denbighshire	50
Suffolk	25 & 26	Caernarvonshire	49
Cambridgeshire	29	Anglesey	52
Huntingdonshire	31	Merionethshire	48
Bedfordshire	30	Montgomeryshire	47
Northamptonshire	32	Cardiganshire	46
Warwickshire	38	Radnorshire	43
Worcestershire	37	Brecknockshire	42
Herefordshire	36	Glamorgan	41
Monmouthshire	35	Carmarthenshire	44
Gloucestershire	33 & 34	Pembrokeshire	45
Oxfordshire	23	Scotland	72 - 112
Buckinghamshire	24	Ireland	H1 - H40

Conclusion

Both of these activities, the addition of missing records and the move to vice-counties, involve a huge amount of work, and I would be very grateful for the assistance of any hemipterists interested in helping with this project. In particular, I would be pleased to receive word of any local publications that contain useful records, especially for those counties which are to be divided into their component vice-counties.

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DISTRIBUTION MAPS FROM THE ATLAS OF THE HEMIPTERA-HETEROPTERA OF THE BRITISH ISLES NOW AVAILABLE ON FLICKR

The distribution maps from Ryan (2014) can now be downloaded from Flickr as GIF files, by following the link <https://www.flickr.com/photos/130782688@N03/sets/72157651890291236>, or by searching on species name from the Flickr home page, <https://www.flickr.com>. These maps were previously available only within the text of the Atlas, in PDF format, and I hope that the availability of the individual images will make it easier for other authors to use them in their publications, on the internet or in printed articles. No permission is required to use the maps, but a link to the Atlas website, given in the reference below, would be much appreciated.

Reference

Ryan, R. P. 2014. An Atlas of the Hemiptera-Heteroptera of the British Isles. <https://sites.google.com/site/BritishHetBugAtlas>.

**THE DIVISION OF RYAN'S COUNTY LIST OF HEMIPTERA-HETEROPTERA FOR
CORNWALL INTO VICE-COUNTY LISTS FOR VC1 AND VC2**

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Introduction

The county list for Cornwall in the fourth edition of the county distribution of the Hemiptera-Heteroptera (Ryan, 2014) was compiled from that of the previous edition (Massee, 1955) with additional records from the national entomological literature published in the six decades separating the two editions. Ryan did not consider local publications, in particular Alexander (2008a), and did not attempt to divide the county into its constituent vice-counties, which are the basis of modern recording. The present article addresses these shortcomings, adding those of Alexander's records that are new to the county distribution, and dividing the county list into separate lists for Watsonian West Cornwall with Scilly (VC1) and Watsonian East Cornwall (VC2).

Alexander's records were interpreted by taking into account the name changes and confusions over identity documented in Ryan (2012, 2013, 2014 & 2015). In the resulting vice-county lists, 302 species are recorded for VC1 and 257 for VC2. 229 species are recorded for both vice-counties, 73 relating only to VC1 and 28 only to VC2. The list for the county as a whole has lengthened from the 307 of Ryan to 330, the increase arising from 43 species added to the list and 20 deleted due to the known records being insufficiently precise to be allocated to a particular vice-county.

The lists for the two vice-counties, which will appear in the next edition of the county distribution, are presented below. The species that are new to Ryan's list for Cornwall are marked as "[NEW]", and the deleted species are marked as "[DELETED]". Almost all the vice-county-specific records are from Alexander (2008a), the exceptions being marked with superscripts: *1 for Alexander (2008b); *2 for Alexander (2011); *3 for Brooke & Nau (2010); and *4 for Huxley (2003).

The divided records

ARADIDAE

<i>Aradus depressus</i> (Fabricius)	VC2
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ACANTHOSOMATIDAE

<i>Acanthosoma haemorrhoidale</i> (Linnaeus)	VC1	VC2
<i>Cyphostethus tristriatus</i> (Fabricius) [NEW]	VC1	VC2
<i>Elasmostethus interstinctus</i> (Linnaeus)	VC1	VC2
<i>Elasmucha grisea</i> (Linnaeus)	VC1	VC2

CYDNIDAE

<i>Adomerus biguttatus</i> (Linnaeus) [DELETED]		
<i>Geotomus punctulatus</i> (A. Costa)	VC1	
<i>Legnotus limbosus</i> (Geoffroy)	VC1	VC2
<i>Legnotus picipes</i> (Fallén) [NEW]	VC1	
<i>Tritomegas bicolor</i> (Linnaeus)	VC1	VC2

THYREOCORIDAE

<i>Thyreocoris scarabaeoides</i> (Linnaeus)	VC1
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SCUTELLERIDAE

<i>Eurygaster maura</i> (Linnaeus) [DELETED]		
<i>Eurygaster testudinaria</i> (Geoffroy)	VC1	VC2
<i>Odontoscelis fuliginosa</i> (Linnaeus) [NEW]	VC1	

SCUTELLERIDAE (CONTINUED)

Odontoscelis lineola Rambur

VC1 VC2

PENTATOMIDAE

<i>Aelia acuminata</i> (Linnaeus)	VC1	VC2
<i>Dolycoris baccarum</i> (Linnaeus)	VC1	VC2
<i>Eurydema oleracea</i> (Linnaeus)	VC1	
<i>Eysarcoris aeneus</i> (Scopoli)	VC1	
<i>Eysarcoris venustissimus</i> (Schrink)		VC2
<i>Neottiglossa pusilla</i> (Gmelin)	VC1	VC2
<i>Palomena prasina</i> (Linnaeus)	VC1	VC2
<i>Pentatoma rufipes</i> (Linnaeus)	VC1	VC2
<i>Picromerus bidens</i> (Linnaeus)	VC1	VC2
<i>Piezodorus lituratus</i> (Fabricius)	VC1	VC2
<i>Podops inunctus</i> (Fabricius)	VC1	VC2
<i>Rhacognathus punctatus</i> (Linnaeus)	VC1	VC2
<i>Sciocoris cursitans</i> (Fabricius)	VC1	
<i>Troilus luridus</i> (Fabricius)	VC1	VC2
<i>Zicrona caerulea</i> (Linnaeus)	VC1	VC2

COREIDAE

<i>Arenocoris fallenii</i> (Schilling)	VC1	VC2
<i>Coreus marginatus</i> (Linnaeus)	VC1	VC2
<i>Coriomeris denticulatus</i> (Scopoli)	VC1	VC2
<i>Enoplops scapha</i> (Fabricius)	VC1	VC2
<i>Leptoglossus occidentalis</i> Heidemann		VC2 ^{*3}
<i>Syromastus rhombeus</i> (Linnaeus)	VC1	VC2

ALYDIDAE

<i>Alydus calcaratus</i> (Linnaeus)	VC1	VC2
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RHOPALIDAE

<i>Chorosoma schillingii</i> (Schilling)	VC1	
<i>Corizus hyoscyami</i> (Linnaeus)	VC1	VC2
<i>Liorhyssus hyalinus</i> (Fabricius)	VC1	VC2
<i>Myrmus miriformis</i> (Fallén)	VC1	VC2
<i>Rhopalus parumpunctatus</i> Schilling	VC1	VC2
<i>Rhopalus subrufus</i> (Gmelin)		VC2

PYRRHOCORIDAE

<i>Pyrrhocoris apterus</i> (Linnaeus) [NEW]	VC1	
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STENOCEPHALIDAE

<i>Dicranoccephalus agilis</i> (Scopoli)	VC1	VC2
<i>Dicranoccephalus albipes</i> (Fabricius) [DELETED]		

LYGAEIDAE

<i>Acompus rufipes</i> (Wolff)	VC1	
<i>Aphanus rolandri</i> (Linnaeus)	VC1	VC2
<i>Beosus maritimus</i> (Scopoli)	VC1	VC2
<i>Chilacis typhae</i> (Perris) [NEW]	VC1	VC2
<i>Cymus clavicularis</i> (Fallén)	VC1	
<i>Cymus glandicolor</i> Hahn	VC1	
<i>Cymus melanocephalus</i> Fieber		VC2
<i>Drymus brunneus</i> (R.F. Sahlberg)	VC1	VC2

LYGAEIDAE (CONTINUED)

<i>Drymus pilicornis</i> (Mulsant & Rey) [NEW]	VC1	
<i>Drymus ryeii</i> Douglas & Scott	VC1	VC2
<i>Drymus sylvaticus</i> (Fabricius)	VC1	VC2
<i>Emblethis griseus</i> (Wolff)	VC1	
<i>Eremocoris podagricus</i> (Fabricius)		VC2
<i>Gastrodes grossipes</i> (De Geer)		VC2
<i>Graptopeltus lynceus</i> (Fabricius)	VC1	VC2
<i>Henestaris halophilus</i> (Burmeister)		VC2
<i>Henestaris laticeps</i> (Curtis)	VC1	VC2
<i>Heterogaster artemisiae</i> Schilling	VC1	VC2
<i>Heterogaster urticae</i> (Fabricius)	VC1	VC2
<i>Ischnocoris angustulus</i> (Boheman)	VC1	VC2
<i>Kleidocerys ericae</i> (Horváth)	VC1	VC2
<i>Kleidocerys resedae</i> (Panzer)	VC1	VC2
<i>Lamproplax picea</i> (Flor)	VC1	
<i>Macrodema microptera</i> (Curtis)	VC1	VC2
<i>Megalonotus antennatus</i> (Schilling)	VC1	VC2
<i>Megalonotus chiragra</i> (Fabricius) [NEW]	VC1	VC2
<i>Megalonotus dilatatus</i> (Herrich-Schaeffer)	VC1	VC2
<i>Megalonotus emarginatus</i> (Rey)	VC1	VC2
<i>Megalonotus praetextatus</i> (Herrich-Schaeffer)	VC1	VC2
<i>Megalonotus sabulicola</i> (Thomson)	VC1	
<i>Nysius ericae</i> (Schilling)	VC1	VC2
<i>Nysius thymi</i> (Wolff)	VC1	
<i>Pachybrachius fracticollis</i> (Schilling)		VC2
<i>Peritrechus geniculatus</i> (Hahn)	VC1	VC2
<i>Peritrechus gracilicornis</i> Puton	VC1	
<i>Peritrechus lundii</i> (Gmelin)	VC1	VC2
<i>Peritrechus nubilus</i> (Fallén)	VC1	VC2
<i>Plinthisus brevipennis</i> (Latreille)	VC1	VC2
<i>Pterotmetus staphyliniformis</i> (Schilling)	VC1	
<i>Raglius alboacuminatus</i> (Goeze)		VC2
<i>Rhyparochromus pini</i> (Linnaeus)	VC1	VC2
<i>Scolopostethus affinis</i> (Schilling)	VC1	VC2
<i>Scolopostethus decoratus</i> (Hahn)	VC1	VC2
<i>Scolopostethus grandis</i> Horváth	VC1	VC2
<i>Scolopostethus pictus</i> (Schilling)	VC1	VC2
<i>Scolopostethus puberulus</i> Horváth	VC1	VC2
<i>Scolopostethus thomsoni</i> Reuter	VC1	VC2
<i>Stygnocoris fuligineus</i> (Geoffroy)	VC1	VC2
<i>Stygnocoris rusticus</i> (Fallén)	VC1	VC2
<i>Stygnocoris sabulosus</i> (Schilling)	VC1	VC2
<i>Taphropeltus contractus</i> (Herrich-Schaeffer)	VC1	VC2
<i>Taphropeltus hamulatus</i> (Thomson)	VC1	
<i>Trapezonotus arenarius</i> (Linnaeus)	VC1	
<i>Trapezonotus desertus</i> Seidenstücker [NEW]	VC1	VC2
<i>Trapezonotus ullrichi</i> (Fieber)	VC1	VC2
<i>Tropistethus holosericus</i> (Scholtz) [NEW]	VC1	

BERYTIDAE

<i>Berytinus crassipes</i> (Herrich-Schaeffer)	VC1	VC2
<i>Berytinus hirticornis</i> (Brullé)	VC1	
<i>Berytinus minor</i> (Herrich-Schaeffer)	VC1	VC2
<i>Berytinus montivagus</i> (Meyer-Dür)	VC1	

BERYTIDAE (CONTINUED)

<i>Berytinus signoreti</i> (Fieber)	VC1	VC2
<i>Gampsocoris punctipes</i> (Germar)	VC1	VC2
<i>Metatropis rufescens</i> (Herrick-Schaeffer) [NEW]	VC1	VC2
<i>Neides tipularius</i> (Linnaeus)	VC1	VC2

PIESMATIDAE

<i>Parapiesma quadratum</i> (Fieber)	VC1	VC2
<i>Piesma maculatum</i> (Laporte)	VC1	VC2

TINGIDAE

<i>Acalypta brunnea</i> (Germar)	VC1	VC2
<i>Acalypta carinata</i> (Panzer) [DELETED]		
<i>Acalypta parvula</i> (Fallén)	VC1	VC2
<i>Agramma laetum</i> (Fallén)	VC1 ^{*2}	VC2
<i>Campylosteira verna</i> (Fallén) [NEW]	VC1	
<i>Catoplatus fabricii</i> (Stål) [NEW]	VC1	
<i>Derephysia foliacea</i> (Fallén)	VC1	VC2
<i>Dictyla convergens</i> (Herrick-Schaeffer)	VC1	
<i>Dictyonota strichnocera</i> Fieber	VC1	VC2
<i>Kalama tricornis</i> (Schrink)	VC1	VC2
<i>Lasiacantha capucina</i> (Germar)	VC1	VC2
<i>Physatocheila dumetorum</i> (Herrick-Schaeffer)	VC1	VC2
<i>Physatocheila smreczynskii</i> China		VC2
<i>Tingis ampliata</i> (Herrick-Schaeffer)	VC1	VC2
<i>Tingis cardui</i> (Linnaeus)	VC1	VC2

REDUVIIDAE

<i>Empicoris vagabundus</i> (Linnaeus)	VC1	VC2
<i>Reduvius personatus</i> (Linnaeus)	VC1	

NABIDAE

<i>Himacerus apterus</i> (Fabricius)	VC1	VC2
<i>Himacerus boops</i> (Schiødte) [DELETED]		
<i>Himacerus major</i> (A. Costa)	VC1	VC2
<i>Himacerus mirmicoides</i> (O. Costa)	VC1	VC2
<i>Nabis brevis</i> Scholtz [NEW]	VC1	
<i>Nabis ericetorum</i> Scholtz	VC1	VC2
<i>Nabis ferus</i> (Linnaeus)	VC1	VC2
<i>Nabis flavomarginatus</i> Scholtz	VC1	VC2
<i>Nabis limbatus</i> Dahlbom	VC1	VC2
<i>Nabis lineatus</i> Dahlbom		VC2
<i>Nabis pseudoferus</i> Remane [NEW]	VC1	VC2
<i>Nabis rugosus</i> (Linnaeus)+	VC1	VC2

ANTHOCORIDAE

<i>Acompocoris pygmaeus</i> (Fallén) [DELETED]		
<i>Anthocoris confusus</i> Reuter	VC1	VC2
<i>Anthocoris gallarumulmi</i> (De Geer) [DELETED]		
<i>Anthocoris limbatus</i> Fieber [NEW]	VC1	
<i>Anthocoris nemoralis</i> (Fabricius)	VC1	VC2
<i>Anthocoris nemorum</i> (Linnaeus)	VC1	VC2
<i>Anthocoris visci</i> Douglas		VC2 ^{*2}
<i>Cardiastethus fasciiventris</i> (Gariglietti)	VC1	VC2
<i>Lyctocoris campestris</i> (Fabricius)	VC1	VC2

ANTHOCORIDAE (CONTINUED)

<i>Orius laevigatus</i> (Fieber)	VC1	VC2
<i>Orius majusculus</i> (Reuter)		VC2
<i>Orius niger</i> (Wolff)	VC1	VC2
<i>Temnostethus gracilis</i> Horváth	VC1	VC2
<i>Temnostethus pusillus</i> (Herrick-Schaeffer) [NEW]	VC1	VC2
<i>Xylocoris cursitans</i> (Fallén)	VC1	VC2
<i>Xylocoris galactinus</i> (Fieber)	VC1	

CIMICIDAE

<i>Cimex columbarius</i> Jenyns [DELETED]	
<i>Cimex lectularius</i> Linnaeus	VC1

MICROPHYSIDAE

<i>Loricula coleoptrata</i> (Fallén)	VC1	
<i>Loricula distinguenda</i> (Reuter) [DELETED]		
<i>Loricula elegantula</i> (Baerensprung)	VC1	VC2
<i>Loricula exilis</i> (Fallén) [NEW]	VC1	
<i>Loricula inconspicua</i> (Douglas & Scott)	VC1	

MIRIDAE

<i>Acrotropis gimmerthalii</i> (Flor)	VC1	VC2
<i>Adelphocoris lineolatus</i> (Goeze)	VC1	VC2
<i>Amblytylus nasutus</i> (Kirschbaum) [NEW]	VC1	
<i>Apolygus lucorum</i> (Meyer-Dür)	VC1	VC2
<i>Apolygus spinolae</i> (Meyer-Dür)	VC1	VC2
<i>Asciodelma obsoleta</i> (Fieber)	VC1	VC2
<i>Atractotomus parvulus</i> Reuter [NEW]	VC1	
<i>Blepharidopterus angulatus</i> (Fallén)	VC1	VC2
<i>Blepharidopterus diaphanus</i> (Kirschbaum) [DELETED]		
<i>Bryocoris pteridis</i> (Fallén)	VC1	VC2
<i>Calocoris roseomaculatus</i> (De Geer)	VC1	VC2
<i>Camptozygum aequale</i> (Villers) [DELETED]		
<i>Campyloneura virgula</i> (Herrick-Schaeffer)	VC1	VC2
<i>Capsodes flavomarginatus</i> (Donovan)	VC1	VC2
<i>Capsodes sulcatus</i> (Fieber)	VC1	VC2
<i>Capsus ater</i> (Linnaeus)	VC1	VC2
<i>Charagochilus gyllenhalii</i> (Fallén)	VC1	VC2
<i>Chlamydatus pullus</i> (Reuter) [NEW]	VC1	
<i>Chlamydatus saltitans</i> (Fallén)	VC1	
<i>Closterotomus fulvomaculatus</i> (De Geer)	VC1	VC2
<i>Closterotomus norwegicus</i> (Gmelin)	VC1	VC2
<i>Compsidolon salicellum</i> (Herrick-Schaeffer)	VC1	VC2
<i>Conostethus roseus</i> (Fallén) [NEW]	VC1	
<i>Cyllecoris histrionius</i> (Linnaeus)	VC1	VC2
<i>Cyrtorhinus caricis</i> (Fallén)	VC1	VC2
<i>Deraeocoris lutescens</i> (Schilling) [NEW]	VC1	VC2
<i>Deraeocoris ruber</i> (Linnaeus)	VC1	VC2
<i>Deraeocoris scutellaris</i> (Fabricius) [DELETED]		
<i>Dicyphus annulatus</i> (Wolff) [NEW]	VC1	VC2
<i>Dicyphus constrictus</i> (Boheman)	VC1	VC2
<i>Dicyphus epilobii</i> Reuter	VC1	VC2
<i>Dicyphus errans</i> (Wolff)	VC1	VC2
<i>Dicyphus globulifer</i> (Fallén)	VC1	VC2
<i>Dicyphus pallicornis</i> (Fieber)	VC1	VC2

MIRIDAE (CONTINUED)

<i>Dicyphus stachydis</i> J. Sahlberg [NEW]	VC1	VC2
<i>Dryophilocoris flavoquadrimaculatus</i> (De Geer)	VC1	VC2
<i>Globiceps flavomaculatus</i> (Fabricius)	VC1	
<i>Globiceps fulvicollis</i> Jakovlev	VC1 ^{*1}	
<i>Grypocoris stysi</i> (Wagner)	VC1	VC2
<i>Hallopodus rufescens</i> (Burmeister)	VC1	
<i>Halticus apterus</i> (Linnaeus) [DELETED]		
<i>Halticus macrocephalus</i> Fieber	VC1	VC2
<i>Harpocera thoracica</i> (Fallén)	VC1	VC2
<i>Heterocordylus genistae</i> (Scopoli)	VC1	
<i>Heterocordylus tibialis</i> (Hahn)	VC1	VC2
<i>Heterotoma planicornis</i> (Pallas)	VC1	VC2
<i>Hoplomachus thunbergii</i> (Fallén) [DELETED]		
<i>Leptopterna dolabrata</i> (Linnaeus)	VC1	VC2
<i>Leptopterna ferrugata</i> (Fallén)	VC1	VC2
<i>Liocoris tripustulatus</i> (Fabricius)	VC1	VC2
<i>Lopus decolor</i> (Fallén)	VC1	VC2
<i>Lygocoris pabulinus</i> (Linnaeus)	VC1	VC2
<i>Lygocoris rugicollis</i> (Fallén)	VC1	VC2
<i>Lygus maritimus</i> Wagner	VC1	VC2
<i>Lygus rugulipennis</i> Poppius	VC1	VC2
<i>Macrolophus rubi</i> Woodroffe [NEW]	VC1	
<i>Macrotylus paykullii</i> (Fallén)	VC1	VC2
<i>Malacocoris chlorizans</i> (Panzer)		VC2
<i>Mecomma ambulans</i> (Fallén)	VC1	VC2
<i>Mecomma dispar</i> (Boheman)		VC2
<i>Megacoelum infusum</i> (Herrick-Schaeffer) [DELETED]		
<i>Megaloceroea recticornis</i> (Geoffroy)	VC1	
<i>Megalocoleus molliculus</i> (Fallén)	VC1	VC2
<i>Megalocoleus tanaceti</i> (Fallén)	VC1	VC2
<i>Miridius quadrivirgatus</i> (A. Costa)	VC1	VC2
<i>Miris striatus</i> (Linnaeus)	VC1	VC2
<i>Monalocoris filicis</i> (Linnaeus)	VC1	VC2
<i>Neolygus contaminatus</i> (Fallén)	VC1	
<i>Neolygus viridis</i> (Fallén)	VC1	VC2
<i>Notostira elongata</i> (Geoffroy)	VC1	VC2
<i>Oncotylus viridiflavus</i> (Goeze)	VC1	VC2
<i>Orthocephalus coriaceus</i> (Fabricius)		VC2
<i>Orthocephalus saltator</i> (Hahn)	VC1	VC2
<i>Orthonotus rufifrons</i> (Fallén)	VC1	
<i>Orthops campestris</i> (Linnaeus) [NEW]	VC1	VC2
<i>Orthops kalmii</i> (Linnaeus) [NEW]		VC2
<i>Orthotylus adenocarpi</i> (Perris) [NEW]	VC1	
<i>Orthotylus ericetorum</i> (Fallén)	VC1	VC2
<i>Orthotylus flavinervis</i> (Kirschbaum)	VC1	
<i>Orthotylus flavosparsus</i> (C.R. Sahlberg)	VC1	VC2
<i>Orthotylus marginalis</i> Reuter [NEW]	VC1	VC2
<i>Orthotylus moncreaffi</i> (Douglas & Scott) [DELETED]		
<i>Orthotylus nassatus</i> (Fabricius)	VC1	VC2
<i>Orthotylus ochrotrichus</i> Fieber [NEW]	VC1	VC2
<i>Orthotylus tenellus</i> (Fallén)		VC2
<i>Orthotylus virescens</i> (Douglas & Scott)	VC1	VC2
<i>Orthotylus viridinervis</i> (Kirschbaum)		VC2
<i>Pantilius tunicatus</i> (Fabricius)	VC1	VC2

MIRIDAE (CONTINUED)

<i>Phylus coryli</i> (Linnaeus)	VC1	VC2
<i>Phylus melanocephalus</i> (Linnaeus)	VC1	VC2
<i>Phytocoris dimidiatus</i> Kirschbaum	VC1	VC2
<i>Phytocoris longipennis</i> Flor	VC1	VC2
<i>Phytocoris populi</i> (Linnaeus)	VC1	VC2
<i>Phytocoris reuteri</i> Saunders	VC1	VC2
<i>Phytocoris tiliae</i> (Fabricius)	VC1	VC2
<i>Phytocoris ulmi</i> (Linnaeus)	VC1	VC2
<i>Phytocoris varipes</i> Boheman	VC1	VC2
<i>Pinalitus cervinus</i> (Herrick-Schaeffer)	VC1	VC2
<i>Pinalitus rubricatus</i> (Fallén)		VC2
<i>Pithanus maerkelii</i> (Herrick-Schaeffer)	VC1	VC2
<i>Plagiognathus arbustorum</i> (Fabricius)	VC1	VC2
<i>Plagiognathus chrysanthemi</i> (Wolff)	VC1	VC2
<i>Platycranus bicolor</i> (Douglas & Scott)	VC1	VC2
<i>Polymerus nigrita</i> (Fallén)	VC1	VC2
<i>Polymerus palustris</i> (Reuter)	VC1	VC2
<i>Polymerus unifasciatus</i> (Fabricius)	VC1	
<i>Psallus ambiguus</i> (Fallén)	VC1	
<i>Psallus falleni</i> Reuter	VC1	
<i>Psallus flavellus</i> Stichel [NEW]	VC1	VC2
<i>Psallus haematodes</i> (Gmelin)	VC1	VC2
<i>Psallus lepidus</i> Fieber [NEW]	VC1	VC2
<i>Psallus perrisi</i> (Mulsant & Rey) [NEW]	VC1	VC2
<i>Psallus varians</i> (Herrick-Schaeffer)	VC1	VC2
<i>Psallus wagneri</i> Ossiannilsson		VC2
<i>Pseudoloxops coccineus</i> (Meyer-Dür) [DELETED]		
<i>Rhabdomiris striatellus</i> (Fabricius)	VC1	VC2
<i>Salicarus roseri</i> (Herrick-Schaeffer) [NEW]	VC1	VC2
<i>Stenodema calcarata</i> (Fallén)	VC1	VC2
<i>Stenodema holsata</i> (Fabricius)	VC1	VC2
<i>Stenodema laevigata</i> (Linnaeus)	VC1	VC2
<i>Stenotus binotatus</i> (Fabricius)	VC1	VC2
<i>Sthenarus rotermundi</i> (Scholtz) [NEW]	VC1	
<i>Strongylocoris luridus</i> (Fallén)	VC1	VC2
<i>Teratocoris saundersi</i> Douglas & Scott [NEW]		VC2
<i>Trigonotylus caelestialium</i> (Kirkaldy) [NEW]	VC1	
<i>Trigonotylus ruficornis</i> (Geoffroy)	VC1	
<i>Tupiocoris rhododendri</i> (Dolling)	VC1	²
<i>Tytthus pubescens</i> (Knight) [NEW]	VC1	
<i>Tytthus pygmaeus</i> (Zetterstedt) [NEW]	VC1	

CERATOCOMBIDAE

Ceratocombus coleoptratus (Zetterstedt) [DELETED]

SALDIDAE

<i>Chartoscirta cincta</i> (Herrick-Schaeffer)	VC1	VC2
<i>Chartoscirta cocksii</i> (Curtis)	VC1	VC2
<i>Halosalda lateralis</i> (Fallén)	VC1	
<i>Salda littoralis</i> (Linnaeus)	VC1	VC2
<i>Saldula c-album</i> (Fieber)	VC1	VC2
<i>Saldula orthochila</i> (Fieber)	VC1	VC2
<i>Saldula palustris</i> (Douglas) [NEW]	VC1	
<i>Saldula pilosella</i> (Thomson)	VC1	

SALDIDAE (CONTINUED)			
<i>Saldula saltatoria</i> (Linnaeus)	VC1	VC2	
AEPOPHILIDAE			
<i>Aepophilus bonnairei</i> Signoret	VC1	VC2	
HEBRIDAE			
<i>Hebrus pusillus</i> (Fallén)	VC1	VC2	
<i>Hebrus ruficeps</i> Thomson [NEW]		VC2	
HYDROMETRIDAE			
<i>Hydrometra stagnorum</i> (Linnaeus)	VC1	VC2	
VELIIDAE			
<i>Microvelia pygmaea</i> (Dufour)	VC1 ^{*4}		
<i>Microvelia reticulata</i> (Burmeister) [NEW]	VC1		
<i>Velia caprai</i> Tamanini	VC1	VC2	
GERRIDAE			
<i>Aquarius najas</i> (De Geer)	VC1	VC2	
<i>Gerris argentatus</i> Schummel		VC2	
<i>Gerris gibbifer</i> Schummel	VC1	VC2	
<i>Gerris lacustris</i> (Linnaeus)	VC1	VC2	
<i>Gerris odontogaster</i> (Zetterstedt)	VC1		
<i>Gerris thoracicus</i> Schummel	VC1	VC2	
NEPIDAE			
<i>Nepa cinerea</i> Linnaeus	VC1	VC2	
<i>Ranatra linearis</i> (Linnaeus)	VC1	VC2	
NAUCORIDAE			
<i>Ilyocoris cimicoides</i> (Linnaeus)	VC1	VC2	
APHELOCHEIRIDAE			
<i>Aphelocheirus aestivalis</i> (Fabricius)		VC2	
NOTONECTIDAE			
<i>Notonecta glauca</i> Linnaeus	VC1	VC2	
<i>Notonecta maculata</i> Fabricius	VC1	VC2	
<i>Notonecta obliqua</i> Thunberg	VC1	VC2	
<i>Notonecta viridis</i> Delcourt	VC1	VC2	
PLEIDAE			
<i>Plea minutissima</i> Leach	VC1	VC2	
CORIXIDAE			
<i>Arctocoris germari</i> (Fieber)	VC1	VC2	
<i>Callicorixa praeusta</i> (Fieber)	VC1	VC2	
<i>Corixa affinis</i> Leach	VC1		
<i>Corixa panzeri</i> Fieber	VC1		
<i>Corixa punctata</i> (Illiger)	VC1	VC2	
<i>Cymatia bonsdorffii</i> (C.R. Sahlberg)		VC2	
<i>Cymatia coleoptrata</i> (Fabricius) [DELETED]			
<i>Hesperocorixa castanea</i> (Thomson)	VC1	VC2	
<i>Hesperocorixa linnaei</i> (Fieber)	VC1	VC2	

CORIXIDAE (CONTINUED)

<i>Hesperocorixa moesta</i> (Fieber) [NEW]	VC1	VC2
<i>Hesperocorixa sahlbergi</i> (Fieber)	VC1	VC2
<i>Micronecta poweri</i> (Douglas & Scott)	VC1	
<i>Paracorixa concinna</i> (Fieber)	VC1	
<i>Sigara distincta</i> (Fieber)	VC1	VC2
<i>Sigara dorsalis</i> (Leach)	VC1	VC2
<i>Sigara falleni</i> (Fieber)	VC1	
<i>Sigara fossarum</i> (Leach)	VC1	
<i>Sigara lateralis</i> (Leach)	VC1	VC2
<i>Sigara limitata</i> (Fieber)	VC1	
<i>Sigara nigrolineata</i> (Fieber)	VC1	VC2
<i>Sigara scotti</i> (Douglas & Scott)	VC1	VC2
<i>Sigara selecta</i> (Fieber)	VC1	
<i>Sigara semistriata</i> (Fieber) [DELETED]	VC1	
<i>Sigara stagnalis</i> (Leach)	VC1	
<i>Sigara venusta</i> (Douglas & Scott)	VC1	VC2 ^{*4}

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**ADDITIONS TO RYAN'S COUNTY LIST OF
HEMIPTERA-HETEROPTERA FOR WARWICKSHIRE**

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Introduction

The county list for Warwickshire in the fourth edition of the county distribution of the Hemiptera-Heteroptera (Ryan, 2014) was compiled from that of the previous edition (Massee, 1955) with additional records from the national entomological literature published in the six decades separating the two editions. Ryan did not consider local publications, in particular Price (1996), and the present article addresses this shortcoming, adding those of Price's records that are new to the county distribution.

Price's records were interpreted by taking into account the name changes and confusions over identity documented in Ryan (2012, 2013, 2014 & 2015). 132 of his species were found to be additional to the 174 listed by Ryan, making a total of 306 for the county. The additional records are listed below.

The additional records

CYDNIDAE

Legnotus limbosus (Geoffroy)

PENTATOMIDAE

Eysarcoris venustissimus (Schrink)
Podops inunctus (Fabricius)

RHOPALIDAE

Rhopalus subrufus (Gmelin)

LYGAEIDAE

Chilacis typhae (Perris)
Drymus ryeii Douglas & Scott
Eremocoris podagricus (Fabricius)
Gastrodes grossipes (De Geer)
Ischnodemus sabuleti (Fallén)
Kleidocerys ericae (Horváth)
Lamproplax picea (Flor)
Macroderma microptera (Curtis)
Megalonotus antennatus (Schilling)
Megalonotus chiragra (Fabricius)
Megalonotus emarginatus (Rey)
Nysius ericae (Schilling)
Scolopostethus decoratus (Hahn)
Stygnocoris fuligineus (Geoffroy)
Stygnocoris rusticus (Fallén)
Trapezonotus desertus Seidenstücker
Trapezonotus dispar Stål

BERYTIDAE

Berytinus clavipes (Fabricius)
Berytinus montivagus (Meyer-Dür)

BERYTIDAE (CONTINUED)

Berytinus signoreti (Fieber)
Gampsocoris punctipes (Germar)

PIESMATIDAE

Parapiesma quadratum (Fieber)

TINGIDAE

Campylosteira verna (Fallén)
Catoplatus fabricii (Stål)
Dictyonota fuliginosa A. Costa
Kalama tricornis (Schrank)
Physatocheila dumetorum (Herrich-Schaeffer)
Tingis reticulata Herrich-Schaeffer

NABIDAE

Himacerus boops (Schiødte)
Himacerus mirmicoides (O. Costa)
Nabis flavomarginatus Scholtz

ANTHOCORIDAE

Acompocoris alpinus Reuter
Acompocoris pygmaeus (Fallén)
Anthocoris gallarumulmi (De Geer)
Anthocoris sarothamni Douglas & Scott
Anthocoris simulans Reuter
Orius vicinus (Ribaut)
Temnostethus gracilis Horváth
Temnostethus pusillus (Herrich-Schaeffer)
Tetraphleps bicuspis (Herrich-Schaeffer)

CIMICIDAE

Oeciacus hirundinis (Lamarck)

MICROPHYSIDAE

Loricula elegantula (Baerensprung)

MIRIDAE

Acetropis gimmerthalii (Flor)
Adelphocoris lineolatus (Goeze)
Amblytylus nasutus (Kirschbaum)
Asciodesma obsoleta (Fieber)
Atractotomus magnicornis (Fallén)
Atractotomus mali (Meyer-Dür)
Atractotomus parvulus Reuter
Blepharidopterus diaphanus (Kirschbaum)
Camptozygum aequale (Villers)
Capsodes flavomarginatus (Donovan)
Charagochilus gyllenhalii (Fallén)
Chlamydatus pullus (Reuter)
Chlamydatus saltitans (Fallén)
Compsidolon salicellum (Herrich-Schaeffer)
Deraeocoris lutescens (Schilling)
Dichrooscytus rufipennis (Fallén)
Dicyphus annulatus (Wolff)

MIRIDAE (CONTINUED)

Dicyphus constrictus (Boheman)
Fieberocapsus flaveolus (Reuter)
Globiceps flavomaculatus (Fabricius)
Globiceps fulvicollis Jakovlev
Halticus apterus (Linnaeus)
Heterocordylus genistae (Scopoli)
Heterocordylus tibialis (Hahn)
Hoplomachus thunbergii (Fallén)
Lygocoris rugicollis (Fallén)
Lygus maritimus Wagner
Lopus decolor (Fallén)
Macrolophus pygmaeus (Rambur)
Macrolophus rubi Woodroffe
Macrotylus paykullii (Fallén)
Malacocoris chlorizans (Panzer)
Megacoelum infusum (Herrich-Schaeffer)
Megaloceroea recticornis (Geoffroy)
Megalocoleus molliculosus (Fallén)
Megalocoleus tanaceti (Fallén)
Miridius quadrivirgatus (A. Costa)
Miris striatus (Linnaeus)
Neolygus populi (Leston)
Neolygus viridis (Fallén)
Oncotylus viridiflavus (Goeze)
Orthocephalus saltator (Hahn)
Orthonotus rufifrons (Fallén)
Orthops basalis (A. Costa)
Orthops campestris (Linnaeus)
Orthops kalmii (Linnaeus)
Orthotylus adenocarpi (Perris)
Orthotylus ericetorum (Fallén)
Orthotylus flavinervis (Kirschbaum)
Orthotylus flavosparsus (C.R. Sahlberg)
Orthotylus ochrotrichus Fieber
Orthotylus prasinus (Fallén)
Orthotylus tenellus (Fallén)
Orthotylus virescens (Douglas & Scott)
Orthotylus viridinervis (Kirschbaum)
Tytthus pygmaeus (Zetterstedt)
Parapsallus vitellinus (Scholtz)
Phoenicocoris obscurellus (Fallén)
Phytocoris pini Kirschbaum
Phytocoris populi (Linnaeus)
Phytocoris reuteri Saunders
Phytocoris tiliae (Fabricius)
Phytocoris varipes Boheman
Pilophorus cinnamopterus (Kirschbaum)
Pilophorus clavatus (Linnaeus)
Pilophorus perplexus Douglas & Scott
Platycranus bicolor (Douglas & Scott)
Psallodema fieberi (Fieber)
Psallus assimilis Stichel
Psallus confusus Rieger
Psallus haematodes (Gmelin)

MIRIDAE (CONTINUED)

Psallus flavellus Stichel
Psallus perrisi (Mulsant & Rey)
Psallus quercus (Kirschbaum)
Psallus salicis (Kirschbaum)
Psallus variabilis (Fallén)
Psallus wagneri Ossiannilsson
Pseudoloxops coccineus (Meyer-Dür)
Salicarus roseri (Herrick-Schaeffer)
Sthenarus rotermundi (Scholtz)
Systellonotus triguttatus (Linnaeus)
Teratocoris saundersi Douglas & Scott
Trigonotylus caelestialium (Kirkaldy)

SALDIDAE

Saldula orthochila (Fieber)
Saldula pallipes (Fabricius)

NOTONECTIDAE

Notonecta obliqua Thunberg

Acknowledgements

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**NEW COUNTY RECORDS OF HEMIPTERA-HETEROPTERA
FROM A PRIVATE COLLECTION**

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Introduction

Following the recent publication of the fourth edition of the county distribution of the Hemiptera-Heteroptera of the British Isles (Ryan, 2014a), I have checked my collection of voucher specimens and found several new county records, details of which are given below. I was entirely unaware at the time of capture that these records were significant. The large number of new county records, and the ease with which they were found, demonstrates the many gaps that exist in the new county distribution, which could easily be filled by entomologists checking their records and collections, as I have done.

The new county records

Given the intention to move the county distribution to a vice-county distribution (Ryan, 2015), vice-county boundaries are followed where these differ from the boundaries of the historic counties of Ryan (2014a). Specifically, Whitecross Green Wood is taken to reside in Buckinghamshire rather than Oxfordshire (Ryan, 2014b). The terms CarVac and DragVac refer to the use of battery-powered suction samplers (Ryan, 2011 & 2013).

HERTFORDSHIRE (VC20)

Halticus luteicollis (Panzer) (Miridae): 14 July 2011, sweeping wood track, Pitstone Hill, Tring (SP951132).

BERKSHIRE (VC22)

Eurygaster testudinaria (Geoffroy) (Scutelleridae): 31 May 2006, sweeping water meadow, Thames Path at Thames Bridge, Wolvercote, Oxford (SP481092).

Gampsocoris punctipes (Germar) (Berytidae): 21 June 2010, sweeping, Greenham Common, Newbury (SU488648); 23 August 2012, DragVac of hillside meadow, NT The Holies, Streatley (SU591801).

Campylomma annulicorne (Signoret) (Miridae): 14 July 2006, beating, Dry Sandford Pit, Dry Sandford (SU466996).

Oncotylus viridiflavus (Goeze) (Miridae): 3 July 2010, sweeping, Greenham Common, Newbury (SU488648).

BUCKINGHAMSHIRE (VC24)

Agramma laetum (Fallén) (Tingidae): 3 September 2010, CarVac of moss, Coombe Hill, Wendover (SP847065).

Alloeotomus gothicus (Fallén) (Miridae): 7 August 2008, beating ride, Whitecross Green Wood (SP601145).

NORTHAMPTONSHIRE (VC32)

Stenodema holsata (Fabricius) (Miridae): 1 August 2012, sweeping ride, Bucknells Wood, Silverstone (SP652448); 1 August 2012, sweeping ride, Salcey Forest, Hartwell (SP794520).

GLOUCESTERSHIRE (VC33 - East Gloucestershire)

Dicyphus pallicornis (Fieber) (Miridae): 21 July 2012, sweeping ride, Bourton Woods, Blockley (SP167332).

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NEW COUNTY RECORDS OF HEMIPTERA-HETEROPTERA FROM NORTHAMPTONSHIRE

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Introduction

At the time of Massee (1955), Northamptonshire was one of the most poorly recorded counties for Hemiptera-Heteroptera. Massee lists just 28 species for the county, two of which were subsequently lost due to species confusions (Ryan, 2015a), which cast doubt on the identity of these records. However, the situation has since improved. Ryan (2014) lists 244 species for the county, but there are still some surprising omissions, indicating that more recording work needs to be done. The majority of the new records since Massee come from the Peterborough area, at the north-eastern end of the county, close to its borders with Cambridgeshire and Huntingdonshire. Very little recording seems to have been done at the south-western end, where the county borders Oxfordshire and Warwickshire. Since this area is close to my own collecting patch, I decided to make some trips in 2014, specifically to fill some of the apparent gaps in Ryan's list for the county.

My work concentrated on the woods near Silverstone, specifically Bucknell's Wood (National Grid Reference SP655447), Pentimore Wood (SP661415) and Whistley Wood (SP614415); and along the dismantled railway lines to the west of this area, in particular a short derelict stretch at Helmdon (SP585433) and a nature reserve near Farthinghoe (SP518402). Several records were also made along the perimeter of a filled-in quarry, near Croughton (SP564337). Details of the 16 county records new to Ryan (2014) are given below. The term HandVac refers to suction sampling using a Vax LiFE handheld vacuum cleaner (Ryan, 2012).

The new county records

Sehirus luctuosus Mulsant & Rey (Cydnidae): 9 June 2014, searching at base of forget-me-not, *Myosotis* spp. (Boraginaceae), Croughton.

Eurygaster testudinaria (Geoffroy) (Scutelleridae): 6 June 2014, sweeping ride, Whistley Wood.

Aelia acuminata (Linnaeus) (Pentatomidae): 2 June 2014, sweeping ride, Pentimore Wood; 6 & 19 June 2014, sweeping, Helmdon.

Dolycoris baccarum (Linnaeus) (Pentatomidae): 2 June 2014, sweeping ride, Pentimore Wood.

Coreus marginatus (Linnaeus) (Coreidae): 2 July 2014, sweeping, Helmdon.

Rhopalus subrufus (Gmelin) (Rhopalidae): 2 June 2014, sweeping ride, Pentimore Wood; 6 & 19 June 2014, sweeping, Helmdon.

Kleidocerys resedae (Panzer) (Lygaeidae): 2 June 2014, beating birch, Pentimore Wood; 6 June 2014, beating birch, Helmdon.

Acalypta parvula (Fallén) (Tingidae): 6 June (nymphs) & 16 July 2014 (adults), HandVac of moss, Helmdon.

Catoplatus fabricii (Stål) (Tingidae): 16 July 2014 (nymph), HandVac of moss, Helmdon.

Atractotomus parvulus Reuter (Miridae): 16 July 2014, beating pine, *Pinus* spp. (Pinaceae), Helmdon.

Chlamydatus evanescens (Boheman) (Miridae): 6 June (nymphs) & 16 July 2014 (adults), HandVac of stonecrop, *Sedum* spp. (Crassulaceae), Helmdon; 9 June 2014 (nymph), HandVac of stonecrop, Croughton.

Orthotylus marginalis Reuter (Miridae): 19 June & 16 July 2014, sweeping and beating, Helmdon.

Pilophorus cinnamopterus (Kirschbaum) (Miridae): 16 July (nymphs) & 30 August 2014 (adults), beating pine, *Pinus* spp. (Pinaceae), Helmdon.

Psallus ambiguus (Fallén) (Miridae): 2 June 2014, beating, Pentimore Wood; 13 June 2014, beating, Farthinghoe.

Psallus assimilis Stichel (Miridae): 6 June 2014, beating Field Maple, *Acer campestre* L. (Sapindaceae), Whistley Wood; 9 June 2014, beating Field Maple, Croughton; 9 June 2014, beating Field Maple, Bucknell's Wood.

Psallus lepidus Fieber (Miridae): 2 June 2014, beating ash, *Fraxinus* spp. (Oleraceae), Pentimore Wood; 9 June 2014, beating ash, Croughton; 13 June 2014, beating ash, Farthinghoe.

In addition to the above, three other records of interest were made, although these are not new county records, as follows.

Corizus hyoscyami (Linnaeus) (Rhopalidae): 30 August 2014, sweeping, Helmdon.

Stenodema holsata (Fabricius) (Miridae): 2 June 2014, sweeping, Pentimore Wood; 9 June 2014, sweeping, Bucknell's Wood. (First reported from the county by Ryan (2015b).)

Hoplomachus thunbergii (Fallén) (Miridae): 19 June 2014, sweeping, Helmdon.

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**NEW COUNTY RECORDS OF
EUROPIELLA ARTEMISIAE (BECKER) (HEMIPTERA: MIRIDAE)**

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Dolling (1999) was the first account in the British entomological literature of the confusion over the identity of *Plagiognathus albipennis* (Fallén) (Miridae). This name had been applied to three separate species, which now reside in the genus *Europiella* Reuter, two of which have been recorded from the British Isles: *Europiella artemisiae* (Becker) and *Europiella decolor* (Uhler). The third species, *Europiella albipennis* (Fallén), has yet to be found in these islands.

These three insects are associated with mugworts, *Artemisia* spp. (Asteraceae), and can only be separated with certainty by examination of the male vesica. Massee (1955) lists 27 counties in England & Wales for *P. albipennis* (Figure 1), but due to the confusion over identity, these records were discounted when compiling Ryan (2014a). Very little recording of the two British species has appeared in the recent national literature. Consequently, the current known distributions are sparse, with just five recorded counties for *E. artemisiae* and three for *E. decolor* (Figure 2), which do not reflect the true ranges of the two species. Clearly, they are highly under-recorded, and are in urgent need of more work, both with existing collections and in the field.

Therefore, during 2014, I made my own contribution to the recording of these species, examining the specimens in my voucher collection and undertaking fresh fieldwork. The male genitalia revealed that all my records were of *E. artemisiae*. The details of these records are as follows, which add four counties to the known distribution of this species.

BERKSHIRE (VC22)

24 August 2014, roadside verge near Streatley (National Grid Reference SU577803).

OXFORDSHIRE (VC23)

19 July 2006 & 16 August 2006, farm track leading to, Sydlings Copse, near Oxford (SP561098); 30 September 2006, 29 September 2007 & 10 June 2008, Shotover Hill, Oxford (SP564062); 10 July 2008, road verge and track to Cleeve Reservoir, Goring (SU611821); 3 September 2014, filled-in quarry, Stanton Harcourt (SP412052).

BUCKINGHAMSHIRE (VC24)

4 September 2014, disused airfield runway, Worminghall (SP637093).

NORTHAMPTONSHIRE (VC32)

30 August 2014, bridge over dismantled railway line, Helmdon (SP586430).

Hopefully, more recording of *Europiella* sp. will be published in due course, to fill more of the many gaps in the county distributions of these species.

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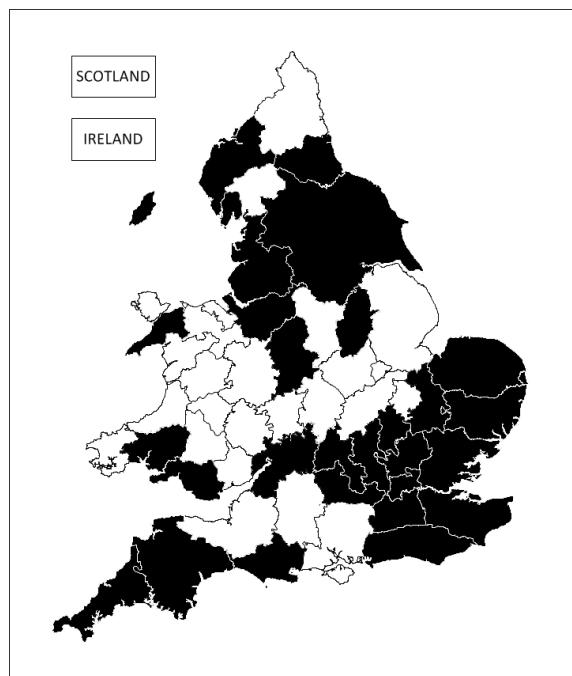


FIGURE 1. The male *Euopiella artemisiae* (left) and the county distribution of *Plagiognathus albipennis* (Massee, 1955; Ryan, 2013) (right).

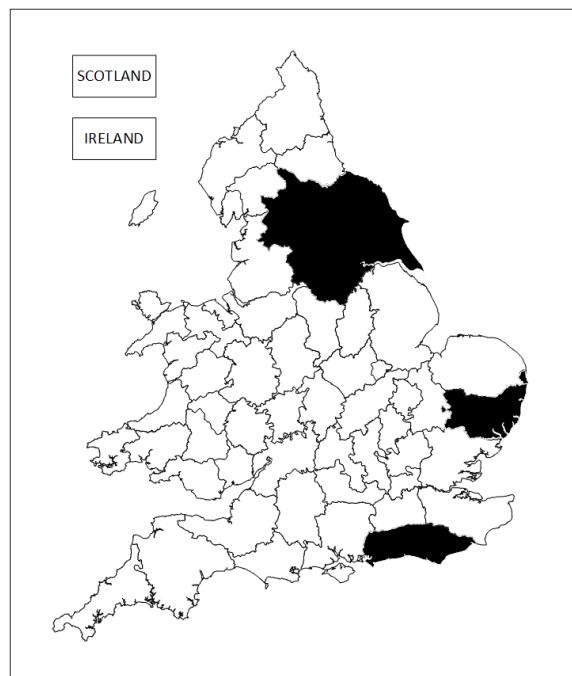
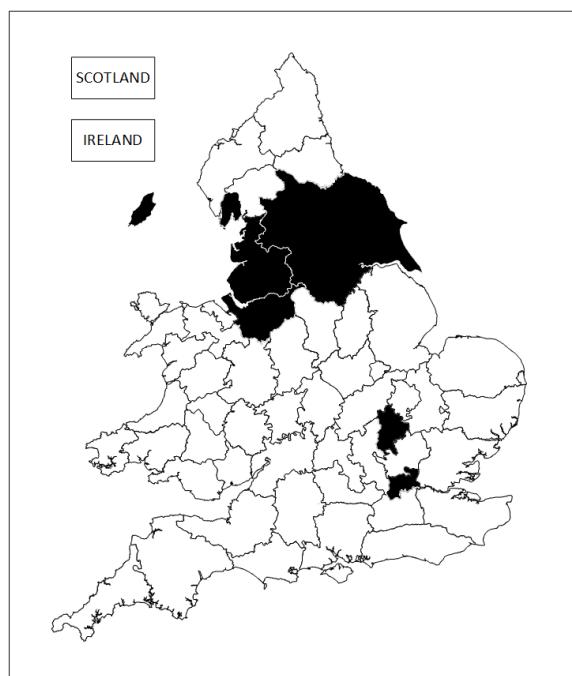


FIGURE 2. The county distributions of *Euopiella artemisiae* (left) and *Euopiella decolor* (right) (Ryan, 2014a & 2014b).

**THE DIVISION OF RYAN'S COUNTY LIST OF HEMIPTERA-HETEROPTERA FOR
GLOUCESTERSHIRE INTO VICE-COUNTY LISTS FOR VC33 AND VC34**

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Introduction

The county list for Gloucestershire in the fourth edition of the county distribution of the Hemiptera-Heteroptera (Ryan, 2014) was compiled from that of the previous edition (Massee, 1955) with additional records from the national entomological literature published in the six decades separating the two editions. Ryan did not consider local publications, in particular the many articles published in the *Gloucestershire Naturalist* (Alexander, 1995, 1996, 2004, 2005 & 2006a; Widgery 2007, 2008a, 2009a, 2010, 2011, 2012 & 2013), and did not attempt to divide the county into its constituent vice-counties, which are the basis of modern recording. The present article addresses these shortcomings, adding those records from the *Gloucestershire Naturalist* that are new to the county distribution, and dividing the county list into separate lists for Watsonian East Gloucestershire (VC33) and Watsonian West Gloucestershire (VC34).

The *Gloucestershire Naturalist* records were interpreted by taking into account the name changes and confusions over identity documented in Ryan (2012, 2013a, 2014 & 2015). In the resulting vice-county lists, 259 species are recorded for VC33 and 242 for VC34. 184 species are recorded for both vice-counties, 75 relating only to VC33 and 58 only to VC34. The list for the county as a whole has shortened from the 323 of Ryan to 317, the decrease arising from 38 species added to the list and 44 deleted due to the known records being insufficiently precise to be allocated to a particular vice-county.

The lists for the two vice-counties, which will appear in the next edition of the county distribution, are presented below. The species that are new to Ryan's list for Gloucestershire are marked as "[NEW]", and the deleted species are marked as "[DELETED]". Almost all the vice-county-specific records are from the previously cited articles by Alexander (unmarked) and Widgery (marked "W"), the remainder being from the following additional publications: (1) Alexander (2000); (2) Alexander (2003); (3) Alexander (2006b); (4) Barclay & Nau (2001); (5) Denton (2004); (6) Huxley (2003); (7) Ryan (2013b); (8) Widgery (2008b); (9) Widgery (2009b); (10) Woodroffe (1960); and (11) Widgery (2015).

The divided records

ARADIDAE

<i>Aneurus avenius</i> (Dufour)	VC33 (W)	
<i>Aneurus laevis</i> (Fabricius)	VC33	VC34
<i>Aradus depressus</i> (Fabricius)	VC33	VC34 (11)

ACANTHOSOMATIDAE

<i>Acanthosoma haemorrhoidale</i> (Linnaeus)	VC33	VC34
<i>Cyphostethus tristriatus</i> (Fabricius)	VC33	VC34
<i>Elasmostethus interstinctus</i> (Linnaeus)	VC33	VC34
<i>Elasmucha grisea</i> (Linnaeus)	VC33	VC34

CYDNIDAE

<i>Adomerus biguttatus</i> (Linnaeus) [DELETED]		
<i>Canthophorus impressus</i> (Horváth) [NEW]	VC33	
<i>Legnotus limbosus</i> (Geoffroy)	VC33	VC34
<i>Sehirus luctuosus</i> Mulsant & Rey	VC33	VC34
<i>Tritomegas bicolor</i> (Linnaeus)	VC33	VC34

THYREOCORIDAE

Thyreocoris scarabaeoides (Linnaeus) VC33 VC34

SCUTELLERIDAE

Eurygaster maura (Linnaeus) [DELETED] VC33 (8) VC34 (8)

PENTATOMIDAE

<i>Aelia acuminata</i> (Linnaeus)	VC33	
<i>Carpocoris purpureipennis</i> (De Geer)		VC34 (4)
<i>Dolycoris baccarum</i> (Linnaeus)	VC33	VC34
<i>Eurydema oleracea</i> (Linnaeus)	VC33 (W)	VC34
<i>Eysarcoris venustissimus</i> (Schrink) [NEW]	VC33	
<i>Neottiglossa pusilla</i> (Gmelin) [DELETED]		
<i>Palomena prasina</i> (Linnaeus)	VC33	VC34
<i>Pentatoma rufipes</i> (Linnaeus)	VC33	VC34
<i>Picromerus bidens</i> (Linnaeus)	VC33	VC34
<i>Piezodorus lituratus</i> (Fabricius)	VC33	VC34
<i>Podops inunctus</i> (Fabricius)	VC33	VC34
<i>Rhacognathus punctatus</i> (Linnaeus)		VC34 (W)
<i>Troilus luridus</i> (Fabricius)	VC33	VC34
<i>Zicrona caerulea</i> (Linnaeus)	VC33	VC34

COREIDAE

<i>Arenocoris fallenii</i> (Schilling) [DELETED]		
<i>Coreus marginatus</i> (Linnaeus)		VC34 (11)
<i>Coriomeris denticulatus</i> (Scopoli)	VC33	VC34
<i>Gonocerus acuteangulatus</i> (Goeze)	VC33 (W)	VC34 (W)
<i>Leptoglossus occidentalis</i> Heidemann	VC33 (W)	
<i>Syromastus rhombeus</i> (Linnaeus) [NEW]		VC34

ALYDIDAE

Alydus calcaratus (Linnaeus) [NEW] VC34

RHOPALIDAE

<i>Corizus hyoscyami</i> (Linnaeus)	VC33 (W)	VC34 (W)
<i>Myrmus miriformis</i> (Fallén)	VC33	VC34
<i>Rhopalus subrufus</i> (Gmelin)	VC33	VC34
<i>Stictopleurus abutilon</i> (Rossi)	VC33 (8)	VC34 (W)
<i>Stictopleurus punctatonervosus</i> (Goeze)	VC33	

STENOCEPHALIDAE

<i>Dicranoccephalus agilis</i> (Scopoli) [DELETED]		
<i>Dicranoccephalus medius</i> (Mulsant & Rey)	VC33 (W)	VC34

LYGAEIDAE

<i>Acompus rufipes</i> (Wolff)	VC33 (W)	
<i>Chilacis typhae</i> (Perris)	VC33	
<i>Cymus claviculus</i> (Fallén)	VC33	
<i>Cymus glandicolor</i> Hahn	VC33	VC34
<i>Cymus melanocephalus</i> Fieber [NEW]	VC33	VC34
<i>Drymus brunneus</i> (R.F. Sahlberg)		VC34
<i>Drymus latus</i> Douglas & Scott [DELETED]		
<i>Drymus pilicornis</i> (Mulsant & Rey) [DELETED]		
<i>Drymus ryeii</i> Douglas & Scott	VC33	

LYGAEIDAE (CONTINUED)

<i>Drymus sylvaticus</i> (Fabricius)	VC33	VC34
<i>Gastrodes abietum</i> Bergroth	VC33	VC34
<i>Gastrodes grossipes</i> (De Geer)	VC33	VC34
<i>Heterogaster artemisiae</i> Schilling	VC33 (W)	VC34
<i>Heterogaster urticae</i> (Fabricius)	VC33	
<i>Ischnodemus sabuleti</i> (Fallén) [NEW]	VC33	VC34
<i>Kleidocerys ericae</i> (Horváth) [NEW]		VC34
<i>Kleidocerys resedae</i> (Panzer)	VC33	VC34
<i>Lamproplax picea</i> (Flor)		VC34
<i>Lasiosomus enervis</i> (Herrich-Schaeffer)	VC33	
<i>Macroplax preyssi</i> (Fieber)	VC33	VC34
<i>Megalonotus antennatus</i> (Schilling)	VC33	
<i>Megalonotus chiragra</i> (Fabricius) [NEW]	VC33	VC34
<i>Megalonotus dilatatus</i> (Herrich-Schaeffer)		VC34 (W)
<i>Megalonotus emarginatus</i> (Rey) [NEW] [DELETED]		
<i>Nysius ericae</i> (Schilling)	VC33 (W)	VC34
<i>Nysius senecionis</i> (Schilling)	VC33	VC34 (8)
<i>Orsillus depressus</i> (Mulsant & Rey)	VC33	VC34
<i>Pachybrachius fracticollis</i> (Schilling) [DELETED]		
<i>Peritrechus geniculatus</i> (Hahn) [DELETED]		
<i>Peritrechus lundii</i> (Gmelin)	VC33	VC34
<i>Peritrechus nubilus</i> (Fallén)	VC33	
<i>Plinthisus brevipennis</i> (Latreille) [DELETED]		
<i>Rhynarochromus pini</i> (Linnaeus)		VC34
<i>Scolopostethus affinis</i> (Schilling)	VC33	VC34
<i>Scolopostethus decoratus</i> (Hahn)		VC34
<i>Scolopostethus pictus</i> (Schilling)		VC34
<i>Scolopostethus puberulus</i> Horváth	VC33	VC34 (W)
<i>Scolopostethus thomsoni</i> Reuter	VC33	VC34
<i>Stygnocoris fuligineus</i> (Geoffroy)		VC33 (W)
<i>Stygnocoris rusticus</i> (Fallén)	VC33	
<i>Stygnocoris sabulosus</i> (Schilling)		VC34
<i>Taphropeltus contractus</i> (Herrich-Schaeffer)	VC33	
<i>Taphropeltus hamulatus</i> (Thomson) [DELETED]		
<i>Trapezonotus arenarius</i> (Linnaeus) [NEW]		VC34
<i>Trapezonotus dispar</i> Stål		VC34 (W)

BERYTIDAE

<i>Berytinus clavipes</i> (Fabricius) [DELETED]		
<i>Berytinus crassipes</i> (Herrich-Schaeffer)	VC33 (3)	
<i>Berytinus minor</i> (Herrich-Schaeffer) [DELETED]		
<i>Berytinus montivagus</i> (Meyer-Dür)	VC33	
<i>Berytinus signoreti</i> (Fieber)	VC33 (11)	
<i>Gampsocoris punctipes</i> (Germar)	VC33	VC34
<i>Metatropis rufescens</i> (Herrich-Schaeffer)	VC33	VC34

PIESMATIDAE

<i>Piesma maculatum</i> (Laporte)	VC33
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TINGIDAE

<i>Acalypta carinata</i> (Panzer)	VC34
<i>Acalypta parvula</i> (Fallén)	VC34
<i>Agramma laetum</i> (Fallén)	VC33 (3)
<i>Campylosteira verna</i> (Fallén)	VC33

TINGIDAE (CONTINUED)

<i>Catoplatus fabricii</i> (Stål)	VC33	VC34
<i>Derephysia foliacea</i> (Fallén)	VC33	
<i>Dictyla convergens</i> (Herrick-Schaeffer)	VC33	
<i>Dictyonota strichnocera</i> Fieber	VC33	VC34
<i>Kalama tricornis</i> (Schrank) [DELETED]		
<i>Oncochila simplex</i> (Herrick-Schaeffer)	VC33	VC34
<i>Physatocheila dumetorum</i> (Herrick-Schaeffer)	VC33	VC34
<i>Physatocheila smreczynskii</i> China [DELETED]		
<i>Tingis ampliata</i> (Herrick-Schaeffer)	VC33	VC34
<i>Tingis cardui</i> (Linnaeus)	VC33	VC34
<i>Tingis reticulata</i> Herrich-Schaeffer	VC33	

REDUVIIDAE

<i>Empicoris baerensprungi</i> (Dohrn)	VC33 (5)	
<i>Empicoris culiciformis</i> (De Geer)	VC33	VC34
<i>Empicoris vagabundus</i> (Linnaeus)	VC33	VC34
<i>Reduvius personatus</i> (Linnaeus)	VC33	VC34

NABIDAE

<i>Himacerus apterus</i> (Fabricius) [NEW]	VC33	VC34
<i>Himacerus boops</i> (Schiødte)	VC33	
<i>Himacerus major</i> (A. Costa)	VC33	VC34 (W)
<i>Himacerus mirmicoides</i> (O. Costa)	VC33	VC34
<i>Nabis ericetorum</i> Scholtz		VC34
<i>Nabis ferus</i> (Linnaeus)	VC33	VC34
<i>Nabis flavomarginatus</i> Scholtz	VC33	VC34
<i>Nabis limbatus</i> Dahlbom	VC33	VC34
<i>Nabis rugosus</i> (Linnaeus)	VC33	VC34

ANTHOCORIDAE

<i>Acompocoris pygmaeus</i> (Fallén)	VC33	
<i>Anthocoris butleri</i> Le Quesne	VC33 (W)	VC34
<i>Anthocoris confusus</i> Reuter	VC33	VC34
<i>Anthocoris gallarumulmi</i> (De Geer) [NEW]		VC34
<i>Anthocoris nemoralis</i> (Fabricius)	VC33	VC34
<i>Anthocoris nemorum</i> (Linnaeus)	VC33	VC34
<i>Buchananiella continua</i> (F.B. White)	VC33 (W)	VC34 (W)
<i>Cardiastethus fasciiventris</i> (Garbiglietti) [DELETED]		
<i>Dufouriellus ater</i> (Dufour)	VC33 (W)	VC34
<i>Elatophilus nigricornis</i> (Zetterstedt)	VC33 (9)	VC34 (W)
<i>Lyctocoris campestris</i> (Fabricius)	VC33	
<i>Orius laevigatus</i> (Fieber)	VC33	VC34
<i>Orius laticollis</i> (Reuter)	VC33 (3)	VC34 (3)
<i>Orius majusculus</i> (Reuter) [NEW]	VC33	VC34
<i>Orius niger</i> (Wolff)	VC33	VC34
<i>Orius vicinus</i> (Ribaut) [NEW]	VC33	VC34
<i>Temnostethus gracilis</i> Horváth	VC33 (10)	VC34
<i>Temnostethus pusillus</i> (Herrick-Schaeffer) [NEW]	VC33 (W)	
<i>Tetraphleps bicuspis</i> (Herrick-Schaeffer)		VC34
<i>Xylocoris cursitans</i> (Fallén)	VC33	VC34
<i>Xylocoris galactinus</i> (Fieber)	VC33	

CIMICIDAE

<i>Cimex lectularius</i> Linnaeus [DELETED]

CIMICIDAE (CONTINUED)

<i>Cimex pipistrelli</i> Jenyns [NEW]	VC33	
<i>Oeciacus hirundinis</i> (Lamarck)		VC34

MICROPHYSIDAE

<i>Loricula elegantula</i> (Baerensprung) [NEW]	VC33	VC34
<i>Loricula pselaphiformis</i> Curtis [NEW] [DELETED]		

MIRIDAE

<i>Acetropis gimmerthalii</i> (Flor)	VC34	
<i>Adelphocoris lineolatus</i> (Goeze)	VC33	VC34
<i>Agnocoris reclairei</i> (Wagner)	VC33 (W)	
<i>Alloeotomus gothicus</i> (Fallén)	VC33	
<i>Amblytylus nasutus</i> (Kirschbaum) [NEW]		VC34
<i>Apolygus lucorum</i> (Meyer-Dür)	VC33	VC34
<i>Apolygus spinolae</i> (Meyer-Dür)		VC34
<i>Asciodelma obsoleta</i> (Fieber)		VC34
<i>Atractotomus magnicornis</i> (Fallén)	VC33	VC34
<i>Atractotomus mali</i> (Meyer-Dür)	VC33	VC34
<i>Blepharidopterus angulatus</i> (Fallén)	VC33	VC34
<i>Blepharidopterus diaphanus</i> (Kirschbaum)	VC33	VC34
<i>Brachynotocoris puncticornis</i> Reuter [NEW]	VC33 (W)	
<i>Bryocoris pteridis</i> (Fallén)	VC33	VC34
<i>Calocoris alpestris</i> (Meyer-Dür)	VC33	VC34
<i>Calocoris roseomaculatus</i> (De Geer)	VC33	VC34
<i>Camptozygum aequale</i> (Villers)		VC34
<i>Campylomma annulicorne</i> (Signoret)	VC33 (W)	
<i>Campyloneura virgula</i> (Herrich-Schaeffer)	VC33	VC34
<i>Capsodes gothicus</i> (Linnaeus)		VC34
<i>Capsus ater</i> (Linnaeus)	VC33	VC34
<i>Capsus wagneri</i> (Remane)		VC34 (W)
<i>Charagochilus gyllenhalii</i> (Fallén)	VC33	
<i>Chlamydatus evanescens</i> (Boheman)	VC33 (7)	
<i>Chlamydatus saltitans</i> (Fallén) [DELETED]		
<i>Chlamydatus wilkinsoni</i> (Douglas & Scott) [DELETED]		
<i>Closterotomus fulvomaculatus</i> (De Geer)	VC33	
<i>Closterotomus norwegicus</i> (Gmelin)	VC33	VC34
<i>Compsidolon salicellum</i> (Herrich-Schaeffer)	VC33	VC34
<i>Conostethus roseus</i> (Fallén) [DELETED]		
<i>Cyllecoris histrionius</i> (Linnaeus)	VC33	
<i>Cyrtorhinus caricis</i> (Fallén)	VC33 (11)	VC34
<i>Deraeocoris flavilinea</i> (A. Costa)	VC33 (W)	
<i>Deraeocoris lutescens</i> (Schilling)	VC33	VC34
<i>Deraeocoris ruber</i> (Linnaeus)	VC33	VC34
<i>Dichrooscytus gustavi</i> Josifov	VC33 (W)	VC34 (W)
<i>Dichrooscytus rufipennis</i> (Fallén)	VC33	
<i>Dicyphus annulatus</i> (Wolff)	VC33	VC34
<i>Dicyphus constrictus</i> (Boheman)	VC33	VC34 (2)
<i>Dicyphus epilobii</i> Reuter	VC33	VC34
<i>Dicyphus errans</i> (Wolff)	VC33	VC34
<i>Dicyphus escalerae</i> Lindberg	VC33 (W)	VC34 (W)
<i>Dicyphus globulifer</i> (Fallén)	VC33	
<i>Dicyphus pallicornis</i> (Fieber) [NEW]	VC33	
<i>Dicyphus pallidus</i> (Herrich-Schaeffer) [NEW]	VC33 (11)	
<i>Dicyphus stachydis</i> J. Sahlberg	VC33	VC34

MIRIDAE (CONTINUED)

<i>Dryophilocoris flavoquadrivirgatus</i> (De Geer)	VC33	VC34
<i>Fieberocapsus flaveolus</i> (Reuter)	VC33 (3)	
<i>Globiceps flavomaculatus</i> (Fabricius) [DELETED]		
<i>Globiceps fulvicollis</i> Jakovlev [DELETED]		
<i>Grypocoris stysi</i> (Wagner)	VC33	VC34
<i>Hallopodus montandoni</i> Reuter	VC33	VC34
<i>Hallopodus rufescens</i> (Burmeister)	VC33	
<i>Halticus luteicollis</i> (Panzer) [DELETED]		
<i>Halticus saltator</i> (Geoffroy) [NEW] [DELETED]		
<i>Harpocera thoracica</i> (Fallén)	VC33	VC34
<i>Heterocordylus genistae</i> (Scopoli) [NEW] [DELETED]		
<i>Heterocordylus tibialis</i> (Hahn) [DELETED]		
<i>Heterotoma planicornis</i> (Pallas)	VC33	VC34
<i>Hoplomachus thunbergii</i> (Fallén)	VC33	VC34
<i>Hypseloecus visci</i> (Puton)	VC33 (W)	
<i>Leptopterna dolabrata</i> (Linnaeus)	VC33	VC34
<i>Leptopterna ferrugata</i> (Fallén)	VC33	VC34
<i>Liocoris tripustulatus</i> (Fabricius)	VC33	VC34
<i>Lopus decolor</i> (Fallén) [NEW]	VC33	
<i>Lygocoris pabulinus</i> (Linnaeus)	VC33	VC34
<i>Lygocoris rugicollis</i> (Fallén)	VC33	
<i>Lygus maritimus</i> Wagner [NEW]		VC34
<i>Lygus pratensis</i> (Linnaeus)	VC33	VC34 (8)
<i>Lygus rugulipennis</i> Poppius	VC33	VC34
<i>Lygus wagneri</i> Remane	VC33	
<i>Macrotylus paykullii</i> (Fallén)	VC33	VC34
<i>Macrotylus solitarius</i> (Meyer-Dür)	VC33	VC34
<i>Malacocoris chlorizans</i> (Panzer)	VC33	VC34
<i>Mecomma ambulans</i> (Fallén)	VC33	VC34
<i>Mecomma dispar</i> (Boheman)	VC33	
<i>Megacoelum beckeri</i> (Fieber)		VC34
<i>Megacoelum infusum</i> (Herrich-Schaeffer)	VC33	VC34
<i>Megaloceroea recticornis</i> (Geoffroy)	VC33	VC34
<i>Megalocoleus molliculus</i> (Fallén)	VC33	VC34
<i>Megalocoleus tanaceti</i> (Fallén) [DELETED]		
<i>Miridius quadriplagiatus</i> (A. Costa)	VC33 (W)	VC34 (W)
<i>Miris striatus</i> (Linnaeus)	VC33	VC34
<i>Monalocoris filicis</i> (Linnaeus)	VC33	VC34
<i>Neolygus contaminatus</i> (Fallén)	VC33	VC34
<i>Neolygus populi</i> (Leston)		VC34
<i>Neolygus viridis</i> (Fallén)	VC33	
<i>Notostira elongata</i> (Geoffroy)	VC33	VC34
<i>Oncotylus viridiflavus</i> (Goeze)	VC33 (W)	VC34
<i>Orthocephalus coriaceus</i> (Fabricius) [DELETED]		
<i>Orthocephalus saltator</i> (Hahn)	VC33	
<i>Orthonotus rufifrons</i> (Fallén)	VC33	VC34
<i>Orthops basalis</i> (A. Costa) [NEW]	VC33 (W)	VC34
<i>Orthops campestris</i> (Linnaeus) [NEW]	VC33	VC34
<i>Orthotylus adenocarpi</i> (Perris) [NEW]		VC34
<i>Orthotylus bilineatus</i> (Fallén)	VC33	VC34 (W)
<i>Orthotylus concolor</i> (Kirschbaum) [NEW]	VC33	
<i>Orthotylus ericetorum</i> (Fallén)	VC33	VC34
<i>Orthotylus flavinervis</i> (Kirschbaum)	VC33	
<i>Orthotylus flavosparsus</i> (C.R. Sahlberg)	VC33	VC34

MIRIDAE (CONTINUED)

<i>Orthotylus marginalis</i> Reuter	VC33	VC34
<i>Orthotylus moncreaffi</i> (Douglas & Scott)		VC34
<i>Orthotylus nassatus</i> (Fabricius) [DELETED]		
<i>Orthotylus ochrotrichus</i> Fieber [NEW]		VC34
<i>Orthotylus prasinus</i> (Fallén) [NEW]	VC33	VC34
<i>Orthotylus tenellus</i> (Fallén) [DELETED]		
<i>Orthotylus virescens</i> (Douglas & Scott)		VC34
<i>Orthotylus viridinervis</i> (Kirschbaum) [DELETED]		
<i>Pachytomella parallela</i> (Meyer-Dür)	VC33	
<i>Pantilius tunicatus</i> (Fabricius)	VC33	VC34
<i>Parapsallus vitellinus</i> (Scholtz)	VC33	
<i>Phoenicocoris obscurellus</i> (Fallén)		VC34
<i>Phylus coryli</i> (Linnaeus)	VC33	VC34
<i>Phylus melanocephalus</i> (Linnaeus)	VC33	VC34
<i>Phytocoris dimidiatus</i> Kirschbaum [NEW]	VC33	
<i>Phytocoris longipennis</i> Flor	VC33	VC34
<i>Phytocoris pini</i> Kirschbaum		VC34 (W)
<i>Phytocoris populi</i> (Linnaeus)	VC33	
<i>Phytocoris tiliae</i> (Fabricius)	VC33	VC34
<i>Phytocoris ulmi</i> (Linnaeus)	VC33	VC34
<i>Phytocoris varipes</i> Boheman	VC33	VC34
<i>Pilophorus cinnamopterus</i> (Kirschbaum)		VC34 (W)
<i>Pilophorus clavatus</i> (Linnaeus)	VC33 (W)	VC34
<i>Pilophorus perplexus</i> Douglas & Scott		VC34 (1)
<i>Pinalitus atomarius</i> (Meyer-Dür) [DELETED]		
<i>Pinalitus cervinus</i> (Herrick-Schaeffer)	VC33	VC34
<i>Pinalitus rubricatus</i> (Fallén) [DELETED]		
<i>Pinalitus viscicola</i> (Puton)		VC34
<i>Pithanus maerkelii</i> (Herrick-Schaeffer)	VC33	VC34
<i>Plagiognathus arbustorum</i> (Fabricius)	VC33	VC34
<i>Plagiognathus chrysanthemi</i> (Wolff)	VC33	VC34
<i>Platycranus bicolor</i> (Douglas & Scott)		VC34
<i>Plesiodema pinetella</i> (Zetterstedt)	VC33	
<i>Polymerus nigrita</i> (Fallén)	VC33	
<i>Polymerus palustris</i> (Reuter) [NEW]		VC34 (W)
<i>Polymerus unifasciatus</i> (Fabricius)		VC34
<i>Psallodema fieberi</i> (Fieber)	VC33	
<i>Psallus albicinctus</i> (Kirschbaum)	VC33 (3)	
<i>Psallus ambiguus</i> (Fallén)	VC33	VC34
<i>Psallus falleni</i> Reuter		VC34
<i>Psallus flavellus</i> Stichel [DELETED]		
<i>Psallus haematodes</i> (Gmelin)	VC33	
<i>Psallus lepidus</i> Fieber	VC33	
<i>Psallus luridus</i> Reuter	VC33	VC34
<i>Psallus perrisi</i> (Mulsant & Rey) [NEW]	VC33	
<i>Psallus salicis</i> (Kirschbaum)	VC33	
<i>Psallus varians</i> (Herrick-Schaeffer)	VC33	
<i>Psallus wagneri</i> Ossiannilsson [NEW]		VC34
<i>Pseudoloxops coccineus</i> (Meyer-Dür) [DELETED]		
<i>Rhabdomiris striatellus</i> (Fabricius)	VC33	VC34
<i>Stenodema calcarata</i> (Fallén)	VC33	VC34
<i>Stenodema holsata</i> (Fabricius)	VC33	VC34
<i>Stenodema laevigata</i> (Linnaeus)	VC33	VC34
<i>Stenotus binotatus</i> (Fabricius)	VC33	VC34

MIRIDAE (CONTINUED)

<i>Sthenarus rotermundi</i> (Scholtz)	VC33	VC34
<i>Strongylocoris leucocephalus</i> (Linnaeus)	VC33	VC34
<i>Strongylocoris luridus</i> (Fallén) [DELETED]		
<i>Teratocoris antennatus</i> (Boheman)	VC33 (W)	VC34 (W)
<i>Tinicephalus hortulanus</i> (Meyer-Dür)	VC33	VC34
<i>Trigonotylus caelestialium</i> (Kirkaldy)		VC34
<i>Tytthus pygmaeus</i> (Zetterstedt) [DELETED]		

CERATOCOMBIDAE

<i>Ceratocombus coleoptratus</i> (Zetterstedt)	VC33	VC34 (8)
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DIPSOCORIDAE

<i>Pachycoleus waltli</i> Fieber	VC33 (W)
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SALDIDAE

<i>Chartoscirta cincta</i> (Herrich-Schaeffer)	VC33	VC34
<i>Chartoscirta cocksii</i> (Curtis)	VC33	
<i>Chartoscirta elegantula</i> (Fallén)	VC33	
<i>Chiloxanthus pilosus</i> (Fallén)		VC34
<i>Halosalda lateralis</i> (Fallén) [NEW]		VC34
<i>Salda littoralis</i> (Linnaeus)		VC34 (3)
<i>Saldula c-album</i> (Fieber)	VC33	VC34
<i>Saldula orthochila</i> (Fieber)	VC33	
<i>Saldula pilosella</i> (Thomson) [DELETED]		
<i>Saldula saltatoria</i> (Linnaeus)	VC33	VC34

HEBRIDAE

<i>Hebrus pusillus</i> (Fallén) [DELETED]

HYDROMETRIDAE

<i>Hydrometra stagnorum</i> (Linnaeus)	VC33	VC34
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VELIIDAE

<i>Microvelia reticulata</i> (Burmeister)		VC34
<i>Velia caprai</i> Tamanini	VC33 (6)	VC34

GERRIDAE

<i>Aquarius najas</i> (De Geer) [DELETED]		
<i>Gerris argentatus</i> Schummel	VC33	VC34
<i>Gerris gibbifer</i> Schummel		VC34
<i>Gerris lacustris</i> (Linnaeus)	VC33 (6)	VC34
<i>Gerris odontogaster</i> (Zetterstedt)		VC34
<i>Gerris thoracicus</i> Schummel	VC33 (6)	VC34

NEPIDAE

<i>Nepa cinerea</i> Linnaeus	VC33	VC34
<i>Ranatra linearis</i> (Linnaeus)	VC33	VC34

NAUCORIDAE

<i>Ilyocoris cimicoides</i> (Linnaeus)	VC33	VC34
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APHELOCHEIRIDAE

<i>Aphelocheirus aestivalis</i> (Fabricius)	VC33 (6)
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NOTONECTIDAE

<i>Notonecta glauca</i> Linnaeus	VC33	VC34
<i>Notonecta maculata</i> Fabricius	VC33	VC34
<i>Notonecta obliqua</i> Thunberg	VC33	VC34
<i>Notonecta viridis</i> Delcourt	VC33	VC34

PLEIDAE

<i>Plea minutissima</i> Leach	VC33	VC34
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CORIXIDAE

<i>Callicorixa praeusta</i> (Fieber)	VC33 (11)	VC34
<i>Corixa affinis</i> Leach [DELETED]		
<i>Corixa panzeri</i> Fieber		VC34
<i>Corixa punctata</i> (Illiger)	VC33	VC34
<i>Cymatia coleoptrata</i> (Fabricius)	VC33	VC34 (6)
<i>Hesperocorixa castanea</i> (Thomson)		VC34 (6)
<i>Hesperocorixa linnaei</i> (Fieber)	VC33	VC34
<i>Hesperocorixa moesta</i> (Fieber) [NEW] [DELETED]		
<i>Hesperocorixa sahlbergi</i> (Fieber)	VC33 (6)	VC34
<i>Micronecta poweri</i> (Douglas & Scott)	VC33 (6)	
<i>Micronecta scholtzi</i> (Fieber)		VC34
<i>Sigara distincta</i> (Fieber)		VC34
<i>Sigara dorsalis</i> (Leach)	VC33 (6)	VC34
<i>Sigara falleni</i> (Fieber)		VC34
<i>Sigara fossarum</i> (Leach)	VC33	VC34
<i>Sigara lateralis</i> (Leach)	VC33 (11)	VC34
<i>Sigara limitata</i> (Fieber)	VC33 (11)	VC34
<i>Sigara nigrolineata</i> (Fieber)	VC33	VC34
<i>Sigara stagnalis</i> (Leach)		VC34

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PINALITUS RUBRICATUS (FALLÉN) (HEMIPTERA: MIRIDAE) IN GLOUCESTERSHIRE

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In the previous article of this journal (Ryan, 2015), it is reported that the Gloucestershire record for the capsid bug *Pinalitus rubricatus* (Fallén) (Miridae) has had to be deleted from the county distribution, since the records for this county have been divided into separate vice-county lists, and no published vice-county-specific record for this species has been found.

I am therefore pleased to report that I took several specimens of this animal on 22 July 2012 along the disused railway embankment of Chedworth Woods, Chedworth, Watsonian East Gloucestershire (VC33) (SP049141), beating a lone, three metre tall spruce tree, *Picea* spp. (Pinaceae). Also taken were *Atractotomus magnicornis* (Fallén) and *Parapsallus vitellinus* (Scholtz) (Miridae).

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**ADDITIONS TO RYAN'S COUNTY LISTS OF HEMIPTERA-HETEROPTERA FOR
CARMARTHENSHIRE, PEMBROKESHIRE AND CARDIGANSHIRE**

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Introduction

The county lists for Carmarthenshire, Pembrokeshire and Cardiganshire in the fourth edition of the county distribution of the Hemiptera-Heteroptera (Ryan, 2014) were compiled from those of the previous edition (Massee, 1955) with additional records from the national entomological literature published in the six decades separating the two editions. Ryan did not consider local publications, in particular the Dyfed Invertebrate Group Newsletter, which I have recently found to be available for download on the internet (<http://yrefail.net/dig>). The present article addresses this shortcoming, adding the records of Kirby & Lambert (1990), Kirby (1991 & 1992), Fowles (1994) and Alexander & Hawkins (1993) that are new to the county distribution.

The new records were interpreted by taking into account the name changes and confusions over identity documented in Ryan (2012, 2013, 2014 & 2015). A net addition of 174 records is made to the county distribution.

The additional records for Carmarthenshire (VC44)

ARADIDAE

Aneurus laevis (Fabricius)

ACANTHOSOMATIDAE

Acanthosoma haemorrhoidale (Linnaeus)
Cyphostethus tristriatus (Fabricius)
Elasmostethus interstinctus (Linnaeus)

COREIDAE

Enoplops scapha (Fabricius)

LYGAEIDAE

Chilacis typhae (Perris)
Cymus glandicolor Hahn
Cymus melanocephalus Fieber
Henestaris laticeps (Curtis)
Pachybrachius fracticollis (Schilling)
Peritrechus geniculatus (Hahn)
Scolopostethus grandis Horváth
Trapezonotus arenarius (Linnaeus)

BERYTIDAE

Berytinus montivagus (Meyer-Dür)

TINGIDAE

Acalypta carinata (Panzer)
Dictyla convergens (Herrich-Schaeffer)

ANTHOCORIDAE

Xylocoris cursitans (Fallén)

MIRIDAE

Calocoris roseomaculatus (De Geer)
Cyllecoris histrionius (Linnaeus)
Deraeocoris lutescens (Schilling)
Dryophilocoris flavoquadrimaculatus (De Geer)
Harpocera thoracica (Fallén)
Lopus decolor (Fallén)
Lygus wagneri Remane
Macrolophus pygmaeus (Rambur)
Miris striatus (Linnaeus)
Neolygus contaminatus (Fallén)
Orthocephalus coriaceus (Fabricius)
Orthotylus flavinervis (Kirschbaum)
Orthotylus moncreaffi (Douglas & Scott)
Orthotylus prasinus (Fallén)
Pantilius tunicatus (Fabricius)
Phylus melanocephalus (Linnaeus)
Polymerus nigrita (Fallén)
Psallus confusus Rieger
Psallus flavellus Stichel
Psallus lepidus Fieber
Psallus perrisi (Mulsant & Rey)
Psallus variabilis (Fallén)
Rhabdomiris striatellus (Fabricius)
Teratocoris antennatus (Boheman)
Teratocoris saundersi Douglas & Scott
Tytthus pygmaeus (Zetterstedt)

SALDIDAE

Chartoscirta cocksii (Curtis)
Salda littoralis (Linnaeus)
Salda morio Zetterstedt
Salda muelleri (Gmelin)
Saldula palustris (Douglas)

CORIXIDAE

Corixa panzeri Fieber

The additional records for Pembrokeshire (VC45)

ACANTHOSOMATIDAE

Cyphostethus tristriatus (Fabricius)
Elasmostethus interstinctus (Linnaeus)

SCUTELLERIDAE

Eurygaster maura (Linnaeus)
Eurygaster testudinaria (Geoffroy)

PENTATOMIDAE

Aelia acuminata (Linnaeus)
Podops inunctus (Fabricius)

COREIDAE

Ceraleptus lividus Stein

STENOCEPHALIDAE

Dicranocephalus albipes (Fabricius)

LYGAEIDAE

Cymus melanocephalus Fieber
Lamproplax picea (Flor)
Megalonotus praetextatus (Herrich-Schaeffer)
Pachybrachius fracticollis (Schilling)
Plinthisus brevipennis (Latreille)
Scolopostethus decoratus (Hahn)
Scolopostethus puberulus Horváth

BERYTIDAE

Berytinus signoreti (Fieber)
Metatropis rufescens (Herrich-Schaeffer)

TINGIDAE

Acalypta brunnea (Germar)
Agramma laetum (Fallén)
Derephysia foliacea (Fallén)
Dictyonota strichnocera Fieber

REDUVIIDAE

Coranus subapterus (De Geer)
Empicoris vagabundus (Linnaeus)

NABIDAE

Nabis lineatus Dahlbom

ANTHOCORIDAE

Anthocoris confusus Reuter
Brachysteles parvicornis (A. Costa)
Orius laevigatus (Fieber)
Temnostethus gracilis Horváth

MICROPHYSIDAE

Loricula distinguenda (Reuter)
Loricula elegantula (Baerensprung)

MIRIDAE

Apolygus spinolae (Meyer-Dür)
Asciodelma obsoleta (Fieber)
Atractotomus magnicornis (Fallén)
Bryocoris pteridis (Fallén)
Calocoris roseomaculatus (De Geer)
Campyloneura virgula (Herrich-Schaeffer)
Capsus ater (Linnaeus)
Cyllecoris histrionius (Linnaeus)
Cyrtorhinus caricens (Fallén)
Deraeocoris ruber (Linnaeus)
Dicyphus constrictus (Boheman)
Dicyphus stachydis J. Sahlberg
Grypocoris stysi (Wagner)
Leptopterna dolabrata (Linnaeus)
Lygus maritimus Wagner

MIRIDAE (CONTINUED)

Macrotylus solitarius (Meyer-Dür)
Neolygus viridis (Fallén)
Notostira elongata (Geoffroy)
Orthocephalus saltator (Hahn)
Orthops basalis (A. Costa)
Orthops campestris (Linnaeus)
Orthops kalmii (Linnaeus)
Orthotylus ericetorum (Fallén)
Orthotylus marginalis Reuter
Orthotylus moncreaffi (Douglas & Scott)
Orthotylus ochrotrichus Fieber
Orthotylus tenellus (Fallén)
Phylus melanocephalus (Linnaeus)
Phytocoris longipennis Flor
Polymerus nigrita (Fallén)
Psallus ambiguus (Fallén)
Psallus confusus Rieger
Psallus lepidus Fieber
Psallus mollis (Mulsant & Rey)
Psallus perrisi (Mulsant & Rey)
Psallus varians (Herrich-Schaeffer)
Stenodema holsata (Fabricius)
Sthenarus rotermundi (Scholtz)
Strongylocoris luridus (Fallén)
Teratocoris saundersi Douglas & Scott
Trigonotylus psammaecolor Reuter
Trigonotylus ruficornis (Geoffroy)
Tytthus pubescens (Knight)

CERATOCOMBIDAE

Ceratocombus coleoptratus (Zetterstedt)

DIPSOCORIDAE

Pachycoleus waltli Fieber

SALDIDAE

Chartoscirta cincta (Herrich-Schaeffer)
Chartoscirta cocksii (Curtis)
Halosalda lateralis (Fallén)
Salda littoralis (Linnaeus)
Salda muelleri (Gmelin)
Saldula palustris (Douglas)

GERRIDAE

Gerris gibbifer Schummel

CORIXIDAE

Sigara scotti (Douglas & Scott)

The additional records for Cardiganshire (VC46)

PENTATOMIDAE

Zicrona caerulea (Linnaeus)

COREIDAE

Enoplops scapha (Fabricius)

LYGAEIDAE

Drymus brunneus (R.F. Sahlberg)
Lamproplax picea (Flor)
Nysius ericae (Schilling)
Nysius thymi (Wolff)
Plinthisus brevipennis (Latreille)
Scolopostethus puberulus Horváth
Trapezonotus desertus Seidenstücker

BERYTIDAE

Berytinus signoreti (Fieber)

PIESMATIDAE

Parapiesma quadratum (Fieber)

TINGIDAE

Acalypta parvula (Fallén)
Derephysia foliacea (Fallén)
Dictyonota strichnocera Fieber
Tingis ampliata (Herrick-Schaeffer)

REDUVIIDAE

Coranus subapterus (De Geer)
Empicoris vagabundus (Linnaeus)

ANTHOCORIDAE

Temnostethus gracilis Horváth
Temnostethus pusillus (Herrick-Schaeffer)
Xylocoris cursitans (Fallén)

MICROPHYSIDAE

Loricula pselaphiformis Curtis

MIRIDAE

Dicyphus constrictus (Boheman)
Lygus maritimus Wagner
Neolygus viridis (Fallén)
Orthops basalis (A. Costa)
Phylus coryli (Linnaeus)
Phylus melanocephalus (Linnaeus)
Phytocoris populi (Linnaeus)
Platycranus bicolor (Douglas & Scott)
Psallus confusus Rieger
Psallus haematodes (Gmelin)
Psallus perrisi (Mulsant & Rey)
Teratocoris saundersi Douglas & Scott
Tytthus pubescens (Knight)
Tytthus pygmaeus (Zetterstedt)

DIPSOCORIDAE

Cryptostemma alienum Herrich-Schaeffer
Pachycoleus waltli Fieber

SALDIDAE

Micracanthia marginalis (Fallén)
Salda littoralis (Linnaeus)
Salda morio Zetterstedt
Salda muelleri (Gmelin)
Saldula palustris (Douglas)

CORIXIDAE

Arctocoris germari (Fieber)
Sigara nigrolineata (Fieber)

Other changes to the county distribution

The record of *Dicranoccephalus albipes* (Fabricius) (Stenocephalidae) for Glamorgan (VC41) is deleted, and added to the list for Pembrokeshire (VC45) above. The record of *Aquarius paludum* (Fabricius) (Gerridae) for Cardiganshire (VC46) is deleted.

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**A NEW SPECIES OF LYGAEIDAE FOR HERTS AND OTHER UPDATES TO THE
ATLAS OF THE HEMIPTERA-HETEROPTERA OF THE BRITISH ISLES**

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A new species of Lygaeidae for Herts (VC20)

On 27 April 2015, I headed to Waterford Heath, which is a former sand and gravel quarry located to the north of Hertford. Following the terminating of quarrying activity in the early 1990s, work has been undertaken to create a “community nature park” on the site, which now boasts grassland, scrub, and some plantation woodland, as well as a small patch of ancient semi-natural woodland. Viper’s-bugloss *Echium vulgare* (Linnaeus) is among the more interesting elements of its flora.

Several interesting finds were made during the visit, including a single *Syromastus rhombeus* (Linnaeus) that was climbing a blade of grass; this species is a rarity for Herts (vice-county 20). The undoubtedly highlight of the day, however, was the discovery of *Graptopeltus lynceus* (Fabricius) (Lygaeidae), which had not previously been recorded in Herts. *Echium vulgare* (Linnaeus) is a food plant of the species.

Other updates to the *Atlas of the Hemiptera-Heteroptera of the British Isles*

In addition to submitting *Graptopeltus lynceus* (Fabricius) as a species to be added for Herts in the *Atlas of the Hemiptera-Heteroptera of the British Isles* (Ryan, 2014a & 2014b), I have analysed various databases of terrestrial Heteroptera records for the county against the Atlas to check for any missing species. As part of the process of cross-comparison, I referred to the annotated checklist of ambiguous species names presented by Ryan (2015) and erred on the side of caution, as necessary. The forty-five species to add to the Atlas, including the one described above, are presented in Table 1 (authorities are not given for simplicity of presentation). Not included in Table 1 is *Myrmecobius exilis* (Fallén), for which there is a single record for the county from 1973 on a database held by the Herts Environmental Records Centre, but which has “Herts & Middx Wildlife Trust” listed in the determiner field instead of a named person.

Of particular note among the additions to the Atlas presented here are three new species for Herts found in recent years by Tristan Bantock (the entries pointing to footnote 6 in Table 1).

TABLE 1. Additions of terrestrial species to the *Atlas of the Hemiptera-Heteroptera of the British Isles* for Herts.

<i>Acalypta carinata</i> ¹	<i>Deraeocoris flavilinea</i> ²	<i>Lygus maritimus</i> ¹	<i>Orius laticollis</i> ³	<i>Psallus assimilis</i> ³
<i>Aelia acuminata</i> ²	<i>Dicranoccephalus medius</i> ²	<i>Lygus wagneri</i> ¹	<i>Orius niger</i> ³	<i>Psallus confusus</i> ³
<i>Alloeotomus gothicus</i> ³	<i>Dicyphus constrictus</i> ¹	<i>Macrolophus pygmaeus</i> ¹	<i>Orsillus depressus</i> ¹	<i>Psallus mollis</i> ⁷
<i>Anthocoris simulans</i> ¹	<i>Drymus pilipes</i> ¹	<i>Macrotylus horvathi</i> ⁶	<i>Orthops campestris</i> ³	<i>Psallus quercus</i> ⁶
<i>Atractotomus parvulus</i> ³	<i>Europiella artemisiae</i> ³	<i>Nabis brevis</i> ¹	<i>Orthops kalmii</i> ¹	<i>Psallus wagneri</i> ³
<i>Calocoris alpestris</i> ¹	<i>Eurygaster testudinaria</i> ⁴	<i>Nabis lineatus</i> ⁷	<i>Orthotylus ochrotrichus</i> ³	<i>Scolopostethus puberulus</i> ¹
<i>Cardiastethus fasciiventris</i> ¹	<i>Graptopeltus lynceus</i> ⁵	<i>Neolygus populi</i> ³	<i>Peritrechus nubilus</i> ¹	<i>Stenodema trispinosa</i> ¹
<i>Charagochilus weberi</i> ¹	<i>Halticus luteicollis</i> ¹	<i>Nezara viridula</i> ⁸	<i>Pilophorus perplexus</i> ³	<i>Trigonotylus ruficornis</i> ³
<i>Coreus marginatus</i> ²	<i>Halticus saltator</i> ¹	<i>Nysius senecionis</i> ⁹	<i>Psallus albicinctus</i> ¹	<i>Xylocoridea brevipennis</i> ⁶

¹Database held by national plant bugs and allies recorder (record determined by previous county recorder); ²database held by Herts Environmental Records Centre (record determined by previous county recorder); ³database held by national plant bugs and allies recorder (record determined by previous national recorder); ⁴record #1702526 on iRecord; ⁵described in the present report; ⁶personal records of current shield bugs and allies national scheme recorder (first record for VC20); ⁷database held by Herts Environmental Records Centre (record determined by previous national recorder); ⁸*Het News* Spring 2015; ⁹unpublished report on bug surveys at King’s Meads in 2005 (record determined by previous county recorder).

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**SOME RECORDS OF NOTEWORTHY HEMIPTERA-HETEROPTERA
FROM HITCHCOPSE PIT, WATSONIAN BERKSHIRE**

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This nature reserve is a quarry formed by sand extraction (National Grid Reference SU452996) and is managed by the Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT). It is noted for its Hymenoptera and Coleoptera, although I have found several interesting species of true bug at this site, and in the sandy fields that surround it.

My first visit to the reserve was on 9 July 2007. Having parked off the main road (SP450002), I set off southwards along the public footpath to the site, but was distracted en route by a derelict field to my left. Working here, I was struck by the great diversity of insects in my sweep net, and in particular by the numerous dark groundbug (Lygaeidae) nymphs among the catch, which were unfamiliar to me. I proceeded into the quarry, and here swept two examples of the local groundbug *Trapezonotus arenarius* (Linnaeus), a denizen of sandy places, and beating the hawthorn, *Crataegus* spp. (Rosaceae), took a specimen of the Notable B *Deraeocoris olivaceus* (Fabricius) (Miridae), a large capsid bug specific to this plant. This latter record is the most westward yet reported for the species in Britain, and the bug was new to the nearby vice-county of Oxfordshire in the previous year (Ryan, 2012). I returned to the site two days later, and searched under some moss loosely covering the sand, finding a third specimen of *T. arenarius*, together with a singleton of the Notable B groundbug *Megalonotus praetextatus* (Herrick-Schaeffer), another animal associated with dry places. Beating the Oak, *Quercus* spp. (Fagaceae), along the south perimeter of the quarry, I took three individuals of the local capsid bug *Pilophorus perplexus* Douglas & Scott.

The mystery of the unidentified groundbug nymphs was resolved later in the year, on 1 August. In the derelict field to the north of the quarry, I swept my first adults, which were the Notable B *Graptopeltus lynceus* (Fabricius). Five of the animal were taken here, and another 19 elsewhere along the east and south perimeter of the quarry. This insect is associated with Boraginaceae, growing in sandy situations. I also took two specimens of the seldom-encountered stiltbug *Neides tipularius* (Linnaeus) (Berytidae) from the north field, which is a bug also usually taken in dry situations. I continued to find *P. perplexus* on the Oak, taking another 11 on this date, and on 11 September also beat a singleton of the local capsid bug *Megacoelium infusum* (Herrick-Schaeffer).

In subsequent years, I found more noteworthy bugs that prefer dry conditions, sweeping a singleton of the shieldbug *Thyreocoris scarabaeoides* (Linnaeus) (Thyreocoridae) (28 July 2011) and three of the shieldbug *Podops inunctus* (Fabricius) (Pentatomidae) (28 September 2011) in the derelict field to the north, and singletons of the squashbug *Ceraleptus lividus* Stein (Coreidae) (30 June 2009) and the groundbug *Trapezonotus desertus* Seidenstücker (28 July 2011) from the quarry floor. This last species had eluded me in previous years, and I took it for the first time only 5 days earlier, sweeping two specimens from ericaceous heath on Thursley Common, Surrey (SU903407). Subsequently, I swept three from a heathy clearing in Burnt Platt Wood, Stoke Row, Chiltern Hills, Oxfordshire (SU692832) (2 August 2011, 24 September 2011 & 19 July 2012) and another from a

hillside meadow at The Holies, Streatley, North Wessex Downs, Berkshire (SU585801) (25 June 2012). In 2011, I also did some pitfall trapping in the quarry, taking more *T. arenarius*, *M. praetextatus* and *G. lynceus*, and also yet another dry site groundbug, *Plinthinus brevipennis* (Latreille). However, the most surprising, and pleasing, element of the catch was the groundbug *Eremocoris podagricus* (Fabricius), which I have found at only two other locations (Ryan, 2013).

The above Notable designations are those of Kirby (1992), and the comments relating to habitat preference are either from this work or from Southwood & Leston (1959).

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THE 2014 HEMIPTERA-HETEROPTERA COUNTY RECORD ROUNDUP

This is the first of the annual gatherings of new county records for the Hemiptera-Heteroptera, published outside this journal. The list presented here is short because the new county distribution (Ryan, 2014a) was published part way through the year, and included most of the new county records published in 2014. However, the following were not included and are new to Ryan (2014a).

TINGIDAE

Acalypta carinata (Panzer): North Wiltshire (VC7) (Ryan, 2014e)

ANTHOCORIDAE

Anthocoris visci Douglas: Oxfordshire (VC23) (Ryan, 2014c)

Buchananiella continua (F.B. White): Oxfordshire (VC23) (Ryan, 2014d)

MIRIDAE

Chlamydatus saltitans (Fallén): Oxfordshire (VC23) (Ryan, 2014b)

Macrolophus rubi Woodroffe: North Wiltshire (VC7) (Ryan, 2014e)

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Ryan, R. P. 2014c. *Anthocoris visci* Douglas (Hemiptera: Anthocoridae) new to Oxfordshire. *Entomologist's Monthly Magazine* **150**: 240.

Ryan, R. P. 2014d. *Buchananiella continua* (F.B. White) (Hemiptera: Anthocoridae) new to Oxfordshire. *British Journal of Entomology and Natural History* **27**: 219-220.

Ryan, R. P. 2014e. New county records for some species of Hemiptera-Heteroptera from North Wiltshire (VC7). *British Journal of Entomology and Natural History* **27**: 220.

SOME HOST PLANT ASSOCIATIONS OF HEMIPTERA-HETEROPTERA IN 2014

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Many members of the Hemiptera-Heteroptera are associated with particular host plants, and where this is the case these are an important part of the insect's natural history. Alas, in most cases the recorded associations appear to be based upon the observation of adults, rather than of nymphs. Given that most adult bugs can and do fly, such records are subject to the possibility of error, the associated plant not being the host for that insect. However, the observation of nymphs (which are of course flightless) in association with plants is a much more reliable basis for establishing host plant associations, provided that care is taken to collect in a way that minimises the risk of the animals having transferred from neighbouring or overhanging vegetation.

Consequently, in my own fieldwork I have started collecting nymphs from particular host plants, and rearing them to adult to confirm their identity. This article is the first of a series, by which a data set of authenticated host plant associations can be established. I welcome contributions from other authors interested in this aspect of true bug natural history.

The records from 2014 are listed below, with the place and date of capture of the nymphs.

ACANTHOSOMATIDAE

Acanthosoma haemorrhoidale (Linnaeus)

Mistletoe, *Viscum album* L. (Santalaceae), on rowan, *Sorbus aucuparia* L. (Rosaceae), St Mary's Church, Oxford (National Grid Reference SP51570621), 20 August 2014.

CYDNIDAE

Tritomegas bicolor (Linnaeus)

Black horehound, *Ballota nigra* L. (Lamiaceae), Linch Hill Leisure Park, Stanton Harcourt, Oxfordshire (SP415039), 4 July 2014.

COREIDAE

Gonocerus acuteangulatus (Goeze)

Hawthorn, *Crataegus* spp. (Rosaceae), Cothill Pit, Dry Sandford, Watsonian Berkshire (SU456990), 23 August 2014.

Yew, *Taxus baccata* L. (Taxaceae), Goose Green, Wolvercote, Oxford (SP493099), 3 September 2014.

LYGAEIDAE

Gastrodes grossipes (De Geer)

Pine, *Pinus* spp. (Pinaceae), University Parks, Oxford (SP512072), 30 July 2014.

Larch, *Larix* spp. (Pinaceae), University Parks, Oxford (SP512072), 30 July 2014.

Kleidocerys resedae (Panzer)

Ivy, *Hedera* spp. (Araliaceae) around trunk of oak, *Quercus* spp. (Fagaceae), Clifton Heath, Clifton Hampden, Oxfordshire (SU549969), 15 August 2014.

MIRIDAE

Blepharidopterus angulatus (Fallén)

Ash, *Fraxinus* spp. (Oleaceae), layby off A43, Radstone, Northamptonshire (SP601395), 16 July 2014.

Cyllecoris histrionius (Linnaeus)

Oak, *Quercus* spp. (Fagaceae), New Marston Meadows, Oxford (SP518079), 18 May 2014.

Oak, *Quercus* spp. (Fagaceae), University Parks, Oxford (SP517071), 17 May 2014.

MIRIDAE (CONTINUED)

Deraeocoris flavilinea (A. Costa)

Hawthorn, *Crataegus* spp. (Rosaceae), the airfield, Worminghall, Buckinghamshire (SP637091), 1 June 2014.

Field maple, *Acer campestre* L. (Sapindaceae), filled-in quarry near Croughton, Northamptonshire (SP564337), 9 June 2014.

Deraeocoris lutescens (Schilling)

Oak, *Quercus* spp. (Fagaceae), New Marston Meadows, Oxford (SP518079), 22 July 2014.

Sycamore, *Acer pseudoplatanus* L. (Sapindaceae), University Parks, Oxford (SP517071), 30 July 2014.

Grypocoris stysi (Wagner)

Cow parsley, *Anthriscus sylvestris* (L.) Hoffm. (Apiaceae), road verge, Beacon Hill, NNR Aston Rowant, Oxfordshire (SU733967), 21 May 2014.

Harpocera thoracica (Fallén)

Oak, *Quercus* spp. (Fagaceae), New Marston Meadows, Oxford (SP518079), 18 April 2014.

Lygocoris rugicollis (Fallén)

Crack willow, *Salix euxina* I. V. Belyaeva (Salicaceae), Dry Sandford Pit, Dry Sandford, Watsonian Berkshire (SU467995), 20 May 2014.

White willow, *Salix alba* L. (Salicaceae), New Marston Meadows, Oxford (SP518078), 18 May 2014.

Miris striatus (Linnaeus)

Alder, *Alnus* spp. (Betulaceae), Dry Sandford Pit, Dry Sandford, Watsonian Berkshire (SU467995), 20 May 2014.

Phylus melanocephalus (Linnaeus)

Oak, *Quercus* spp. (Fagaceae), New Marston Meadows, Oxford (SP518079), 30 May 2014.

Pinalitus cervinus (Herrick-Schaeffer)

Hornbeam, *Carpinus betulus* L. (Betulaceae), Beacon Hill, NNR Aston Rowant, Oxfordshire (SU727971), 21 May 2014.

Psallus ambiguus (Fallén)

Alder, *Alnus* spp. (Betulaceae), Dry Sandford Pit, Dry Sandford, Watsonian Berkshire (SU467995), 20 May 2014.

Crack willow, *Salix euxina* I. V. Belyaeva (Salicaceae), Dry Sandford Pit, Dry Sandford, Watsonian Berkshire (SU467995), 20 May 2014.

Field maple, *Acer campestre* L. (Sapindaceae), New Marston Meadows, Oxford (SP516081), 18 May 2014.

White willow, *Salix alba* L. (Salicaceae), New Marston Meadows, Oxford (SP518078), 18 May 2014.

Psallus assimilis Stichel

Field maple, *Acer campestre* L. (Sapindaceae), New Marston Meadows, Oxford (SP516081), 18 May 2014.

Psallus lepidus Fieber

Ash, *Fraxinus* spp. (Oleaceae), North Leigh Common, North Leigh, Oxfordshire (SP400136), 3 June 2014.

Ash, *Fraxinus* spp. (Oleaceae), filled-in quarry near Croughton, Northamptonshire (SP564337), 9 June 2014.

Psallus montanus Josifov

Birch, *Betula* spp. (Betulaceae), Dry Sandford Pit, Dry Sandford, Watsonian Berkshire (SU467996), 20 May 2014.

Psallus varians (Herrick-Schaeffer)

Oak, *Quercus* spp. (Fagaceae), The Holies, Streatley, Berkshire (SU585801), 15 May 2014.

Oak, *Quercus* spp. (Fagaceae), New Marston Meadows, Oxford (SP518079), 18 May 2014.

Oak, *Quercus* spp. (Fagaceae), University Parks, Oxford (SP517071), 17 May 2014.

Pseudoloxops coccineus (Meyer-Dür)

Ash, *Fraxinus* spp. (Oleaceae), layby off A43, Radstone, Northamptonshire (SP601395), 16 July 2014.

BOOK REVIEW:

**VERSPREIDINGSATLAS NEDERLANSE WANTSEN (HEMIPTERA-HETEROPTERA)
[A DISTRIBUTION ATLAS OF THE HEMIPTERA-HETEROPTERA OF THE NETHERLANDS]**

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I have received review copies of the first three volumes of this text from the publishers, *EIS Kenniscentrum Insecten en andere ongewervelden [European Invertebrate Survey, Knowledge Centre of Insects and other Invertebrates]*, Leiden, The Netherlands. Details of the individual volumes are as follows.

Volume 1: Aukema, B., Cuppen, J. G. M., Nieser, N & Tempelman, D. 2002. ISBN 90-76261-03-2. 169 pages, covering the Dipsocoromorpha, Nepomorpha & Leptopodomorpha.

Volume 2: Aukema, B. & Hermes, D. J. 2006. ISBN 90-76261-04-0. 136 pages, covering the Tingidae, Microphysidae, Nabidae, Anthocoridae, Cimicidae & Reduviidae.

Volume 3: Aukema, B. & Hermes, D. J. 2014. ISBN 978-90-76261-10-2. 296 pages, covering the Miridae.

The remaining species of Hemiptera-Heteroptera, the members of the Pentatomomorpha, will no doubt be covered by subsequent volumes.

Each volume is 24x17cm, printed monochrome, soft bound, and is available from the publisher at 10 Euros plus shipping (<http://www.eis-nederland.nl/atlassen>), or 30 Euros from an online publisher (<http://www.bol.com>). The text is entirely in the Dutch language. Each volume has a similar structure. Following a short introductory section, each species is given a separate page, with an introductory page for each family (and subfamily in the case of the Miridae), including an excellent drawing of an example insect. The text of each species page is divided into sections covering synonyms (where applicable), references for identification, comments on world distribution, natural history, The Netherlands status, and references to other relevant publications for that species. Supporting the text are diagrams. A bar-chart shows the seasonal distribution of adults, plotting the number of records for each 10 day period (three per month) through the year, separately for males and females in Volumes 2 and 3. An area-plotted distribution map covering the whole of Europe shows in which countries the species has been recorded (Volume 3 only). The geographical distribution within The Netherlands is shown as spot-plotted maps, one for records prior to 1980 and another for records from 1980 onwards. The spots represent grid squares 5 by 5 km (uurhokken, quarter-hectads). An example species page from Volume 3 is shown in Figure 1. Each volume concludes with a reference list, index and four appendices: a systematic listing of the species covered by the volume; a tabulation of record totals by category for each species; a cross-tabulation of records for species by province (the 12 regions of The Netherlands); and a list of the names of contributing recorders.

This atlas is an excellent example of its kind, and serves as a model of how such studies should be presented. The hierarchical treatment of distribution – world (text), Europe (area plot) and The Netherlands (cross-tabulation, spot plot and text) – is both comprehensive and concise. The spot plots are prone the usual problems of adequate coverage, meaning that the absence of a spot does not mean the absence of the insect. However, this is a problem which affects all studies of geographical distribution, to a greater or lesser extent, at all levels of resolution, and such maps need only to be interpreted with this limitation in mind. The geographical distribution of recording effort is shown in the introduction to each volume. The bar-charts are useful for students of phenology, indicating not only when the adults can be found, but also the likely overwintering stage and sex, and whether the insect is single or double brooded. These data are, of course, prone to artefact. Some bugs are more easy to find at certain times of the year than at others, and recording effort is not likely to be uniform through the year. However, as with distribution maps, this is a matter of sensible interpretation. The generous reference lists are well worth browsing, and the references for identification are particularly useful. Most British readers will be hindered by the fact that the text is in the Dutch language,

requiring the labour of either reference to a dictionary or retying the text into Google Translate (<https://translate.google.co.uk>). However, the diagrams, listings and tabulations provide much of the information and speak for themselves.

The British Isles has little to compare with this atlas of The Netherlands. The only comprehensive atlas of British Hemiptera-Heteroptera is Ryan (2014), which is based only upon county records of species, which are cross-tabulated, area-plotted and listed by county. Huxley (2003) is much more comparable in standard with The Netherlands atlas, but this only covers the water bugs, comprising just 12% of the British list. It is to be hoped that one day the British Isles will be served by a comprehensive and detailed atlas, as is now well under way for The Netherlands.

I am most grateful to the publishers for sending me these volumes for review, and to Dr Berend Aukema for suggesting that they do so.

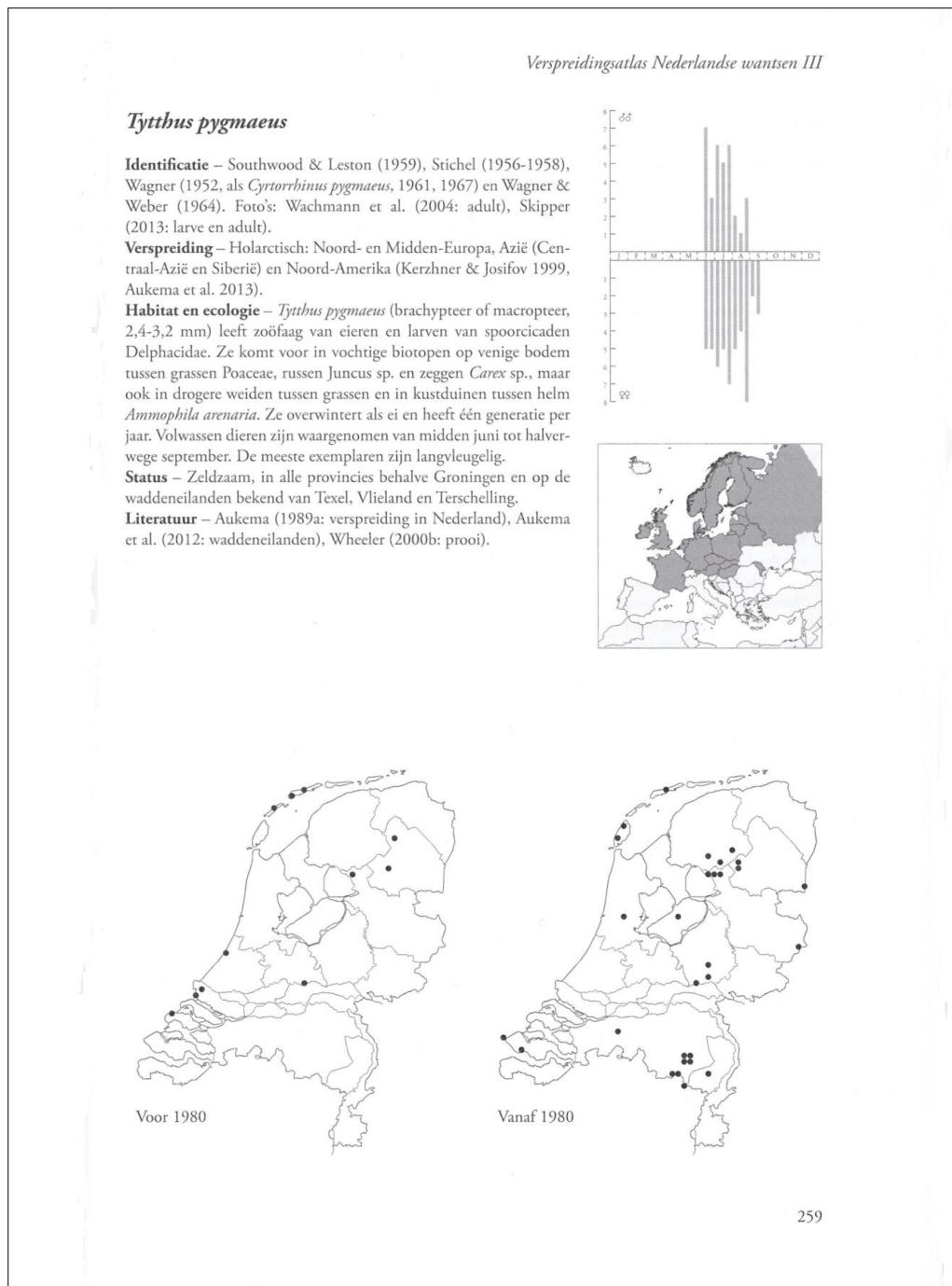


FIGURE 1. An example species page from Volume 3 of the atlas.

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AN ENCOUNTER WITH *TAPHROPELTUS HAMULATUS* (THOMSON) (HEMIPTERA: LYGAEIDAE) IN THE OXFORDSHIRE CHILTERNS

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Oxfordshire is one of only five counties from which this bug has been reported from Britain (Ryan, 2014a), and its presence here is dependent upon a single site at Bald Hill in the Oxfordshire Chilterns. The unpublished records of the county recorder, Mr. John Campbell, show that it was last reported from the site in 1987. Given that this species has, apparently, a slender presence within Oxfordshire, I was very pleased to take a specimen sweeping sparse grasses on an adjacent hill, overlooking the M40 motorway (National Grid Reference SU727964), on 5 July 2013.

This insect is categorised as Notable B by Kirby (1992). It seldom features in the national journals. Southwood & Leston (1959) reports that the bug is found amongst litter, and other accounts report it from moss, thick grass and under stones, all on chalk (Scudder, 1957; Woodroffe 1959a & 1959b; Massee, 1962; Kirby, 1984). I have searched these niches at Bald Hill, and the neighbouring hills, without finding the bug. The animal is presumably rather elusive.

There has been some controversy in the past over the specific status of *T. hamulatus*, it being considered by some as just a small, dark form of the widespread *Taphropeltus contractus* (Herrick-Schaeffer) (Woodroffe, 1959a). Woodroffe points out that although such variants of *T. contractus* may exist, true *T. hamulatus* has other anatomical differences with its congener, and the two species have different habitat requirements. Figures 1 and 2 provide a comparison between the two animals and their county distributions. The shorter, thicker antennae of *T. hamulatus* are clear.

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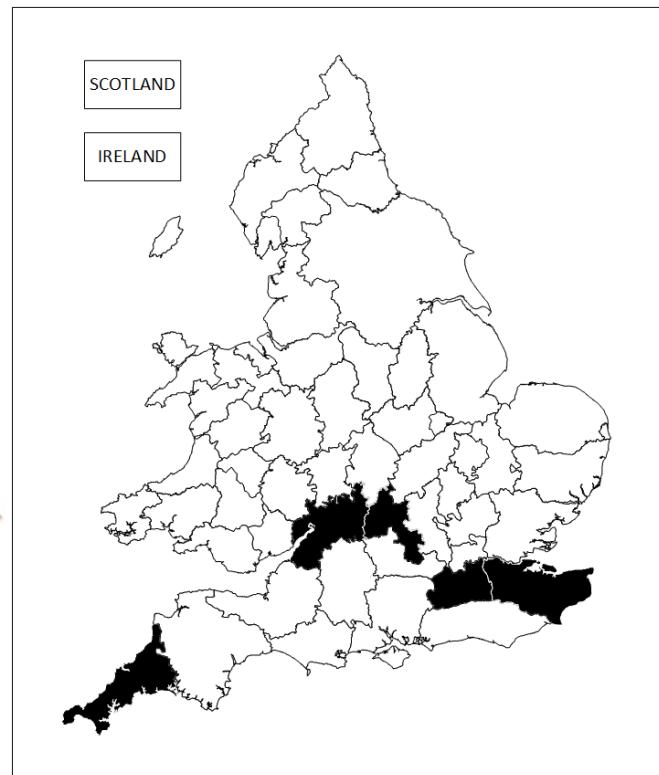


FIGURE 1. *Taphropeltus hamulatus* (Thomson) and its county distribution (Ryan, 2014b).

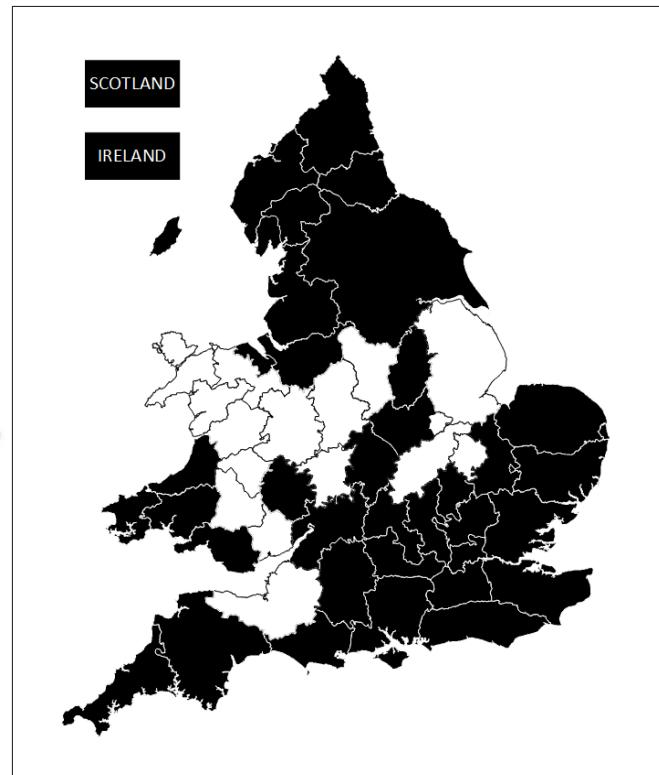


FIGURE 2. *Taphropeltus contractus* (Herrick-Schaeffer) and its county distribution (Ryan, 2014b).

**A SEARCH FOR RECORDS OF *NOTOSTIRA ERRATICA* (LINNAEUS)
(HEMIPTERA: MIRIDAE) IN OLD COLLECTIONS**

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The recent discovery that *Notostira erratica* (Linnaeus) is a common insect in Britain (Ryan, 2015), albeit much less so than the very similar *Notostira elongata* (Geoffroy), conflicts with previous reports of the insect being rare or absent (Southwood & Leston, 1959; Woodroffe, 1977). The question of whether the old reports were mistaken or whether the insect has only recently become common in this country, can only be settled by examining old collections of *Notostira* Fieber and checking the identity of specimens.

My personal study of the Hemiptera-Heteroptera did not begin seriously until 2006, and my limited collection of recent specimens had already been examined in the preparation of Ryan (2015). However, I did dabble with the true bugs in my youth, and I was pleased to find many specimens of *Notostira* in my old collections.

Between 1979 and 1983, I had collected within bicycling distance of my childhood home in Hull, East Yorkshire, during family rambles at the weekend more widely in Yorkshire and Lincolnshire, and on family holidays in the fenland and breckland of Cambridgeshire, Norfolk and Suffolk. Forty male *Notostira* Fieber were found in my store boxes from this time, taken in the vice-counties of South-east Yorkshire (VC61) (18 specimens), North Lincolnshire (VC54) (2), Cambridgeshire (VC29) (1), West Norfolk (VC28) (15) and West Suffolk (VC26) (4). There were also twelve male specimens from West Sussex (VC13), taken in 1989 when I lived in the county. Among the total of 52 male *Notostira*, none were found to be *N. erratica*. All were *N. elongata*.

My recent collecting has found that typically about 4% of *Notostira* are *N. erratica* (ignoring the data from one site where it was 90%) (Ryan, 2015). If this was also the case in 1979-1989, I would have expected to find at least one *N. erratica* in my old collections. However, the probability of examining 52 specimens of *Notostira* and finding them all to be *N. elongata*, with this species constituting 96% of the population, is easily calculated as 0.96 raised to the power of 52, which is 0.12; that is, unlucky but well within the realm of possibility.

Clearly, the examination of hundreds of old specimens will be required to draw a reliable conclusion on the past status of *N. erratica* in Britain. This could, however, be readily achieved by pooling the results from a number of hemipterists, provided that negative results such as mine are published as well as positive ones. Otherwise, there will be a bias towards *N. erratica* in the combined percentages, suggesting that it was more common in the past than was actually the case.

References

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**NEW COUNTY RECORDS FOR *TRIGONOTYLUS RUFICORNIS* (GEOFFROY) AND
TRIGONOTYLUS CAELESTIALIUM (KIRKALDY) (HEMIPTERA: MIRIDAE)**

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Trigonotylus caelestialium (Kirkaldy) was reported as new to Britain by Aukema & Nau (1992), from specimens standing in the collections of the British Museum (Natural History) as *Trigonotylus ruficornis* (Geoffroy). One of these specimens was collected in the year 1900, showing that the new species had long been present in Britain. The many and widespread county records that promptly followed its discovery (Ryan, 2014a), showed that this was not a rare insect in Britain. Clearly, there had been confusion between the two species, and all previous records for *T. ruficornis* were doubtful. Recording for *T. ruficornis* would have to start again from scratch.

Alas, as is often the case with such 'species splits', whilst the new species gains a lot of attention from entomologists, records of the existing species tend not to be reported. The effect of this on the county distribution can be seen in Figures 1 & 2. Prior to the species split, *T. ruficornis* was recorded from 40 of the 52 counties of England and Wales, but now it is recorded from only three counties in England. In contrast, *T. caelestialium* has 12 recorded counties. Clearly, much more work is required to repair the county distribution of *T. ruficornis*, and it will be interesting to see how the distributions of these two species compare, once sufficient recording work has been published.

Consequently, to advance the study of these species' distributions, I present here records from my voucher collection. These include five new county records for *T. ruficornis* (Hampshire, Sussex, Surrey, Berkshire and Oxfordshire) and one for *T. caelestialium* (Buckinghamshire).

Trigonotylus ruficornis (Geoffroy)

SOUTH HAMPSHIRE (VC11)

25 June 2011, Hawkhill Inclosure, near Brockenhurst, New Forest (SU350025).

WEST SUSSEX (VC13)

11 August 2010, Bosham Harbour, near Chichester (SU805033).

SURREY (VC17)

30 June 2008, Lightwater Country Park (SU915619).

19 July 2008, Chobham Common NNR (SU968652).

26 July 2008, Bagshot Heath (SU901635).

23 July 2011, Thursley Common (SU903407).

BERKSHIRE (VC22)

26 July 2006, Moor Copse, near Pangbourne (SU638739).

23 September 2007, Iffley Meadows, Oxford (SP524036).

11 July 2006, Inkpen Common (SU382642).

17 July 2006, Wildmoor Heath, Crowthorne (SU842630).

14 June 2008, 26 June 2008, 25 June 2009, 16 June 2010, 21 June 2011 & 16 June 2014, The Holies, Streatley (SU586801).

23 June 2008, Hitchcopse Pit, Dry Sandford (SU453995).

21 June 2010, 22 June 2010 & 3 July 2010, Greenham Common, Newbury (SU488648).

OXFORDSHIRE (VC23)

23 June 2006, Waterperry Wood (SP604087).

4 July 2006, Combe Field West, Goring (SU613798).

12 July 2006, Aston Rowant NNR, Chiltern Hills (SU727963).

7 August 2008, perimeter of quarry, Enstone (SP372247).

8 August 2009, perimeter of lake, Stanton St John (SP570090).

29 June 2011 Cowleaze Wood, Chiltern Hills (SU726957).

9 July 2011, Burnt Platt Wood, Stoke Row, Chiltern Hills (SU692832).

23 June 2014, Aston Rowant NNR, Chiltern Hills (SU724958).

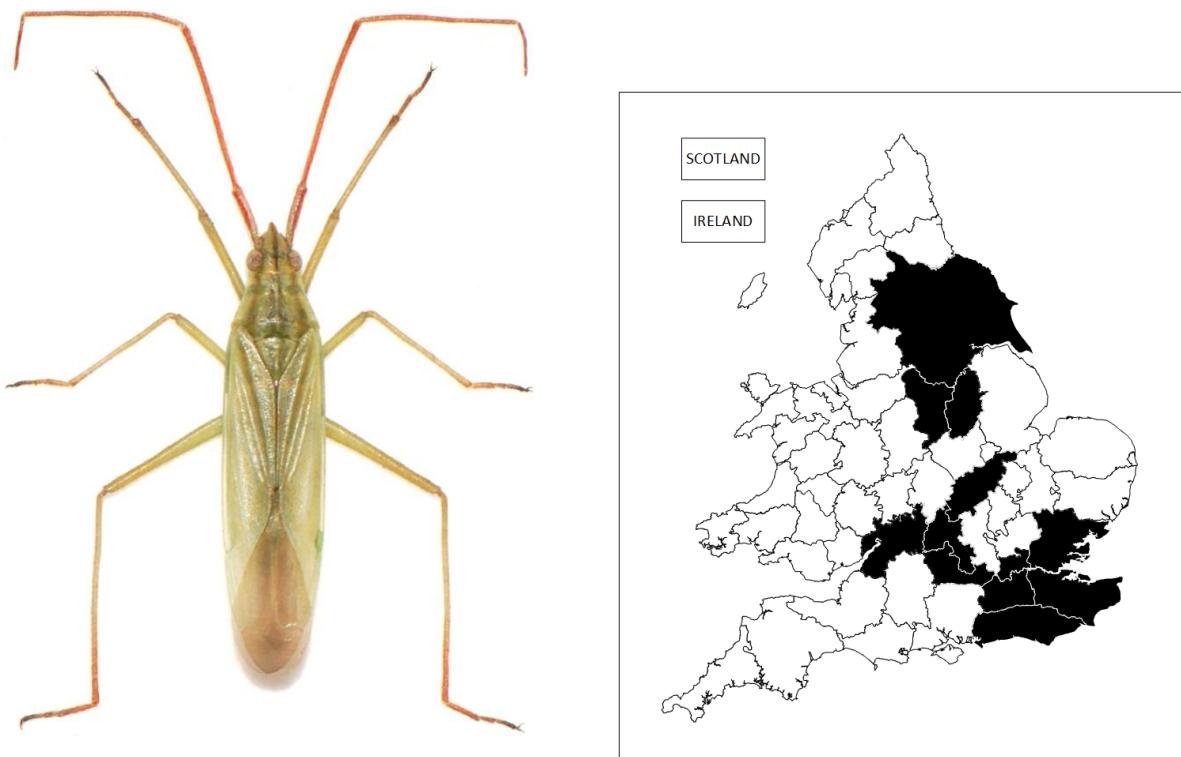


FIGURE 1. *Trigonotylus caelestialium* (Kirkaldy) and its county distribution (Ryan, 2014b).

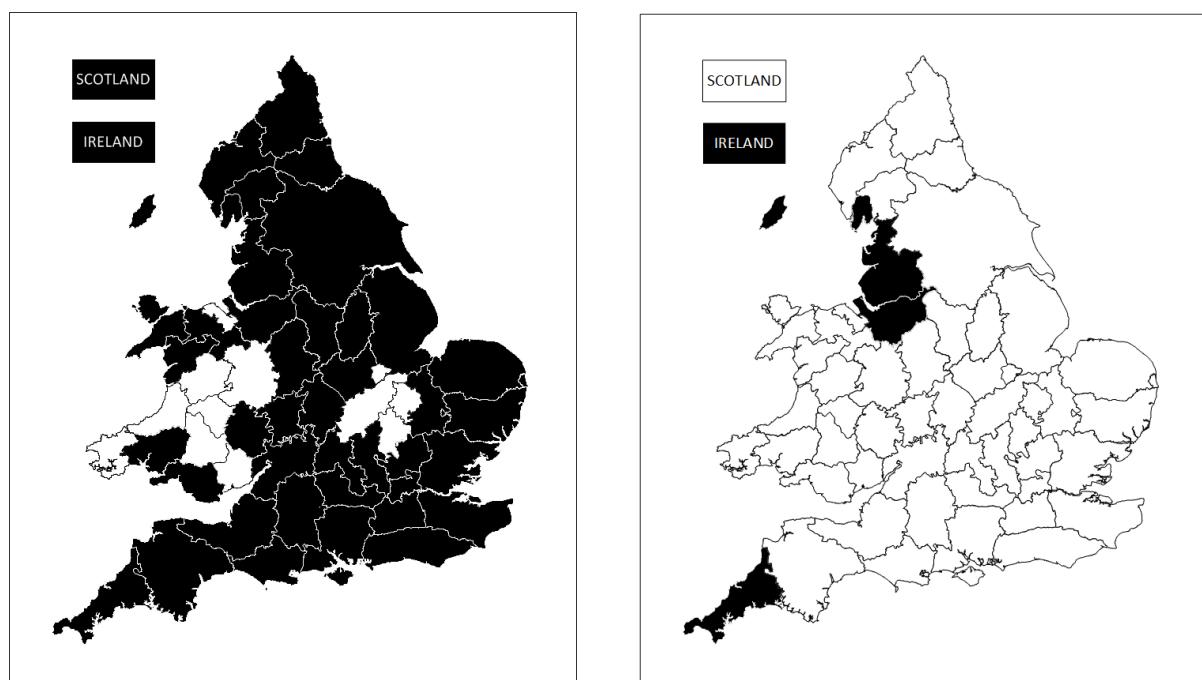


FIGURE 2. The county distributions of *Trigonotylus ruficornis* (Geoffroy) before the 'species split' (left) (Ryan, 2013) and now (right) (Ryan, 2014b).

Trigonotylus caelestialium (Kirkaldy)

SURREY (VC17)

19 July 2008, Chobham Common NNR (SU968652).

BERKSHIRE (VC22)

26 August 2007 & 23 September 2007, Iffley Meadows, Oxford (SP524036).

OXFORDSHIRE (VC23)

29 August 2007, waste ground, Walton Well Road, Oxford (SP503074).

8 August 2009, 4 September 2014 & 6 September 2014, perimeter of lake, Stanton St John (SP570090).

5 August 2011, track to Sydlings Copse, near Oxford (SP561098).

15 June 2011, Queen Wood, Christmas Common, Chiltern Hills (SU715928).

BUCKINGHAMSHIRE (VC24)

17 July 2014, airfield runway, Worminghall (SP640107).

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AN ODD AFTERNOON ON CLIFTON HEATH, OXFORDSHIRE

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I visited this area of woodland (National Grid Reference SU549969) on 15 August 2014 with the intention of capturing specimens of the Bramble Capsid *Macrolophus rubi* Woodroffe (Miridae), in order to add this species to my photographic collection (<https://www.flickr.com/photos/132540299@N02/sets/72157649622182364/>). However, I was dismayed to find on my arrival that considerable felling and clearance has taken place since my last visit, and what little remained of the bramble, *Rubus* spp. (Rosaceae), did not provide any of the desired insect.

However, work on other plants, produced some interesting, if rather odd results. Ivy, *Hedera* spp. (Araliaceae) around the trunk of an oak, *Quercus* spp. (Fagaceae), yielded three species normally associated with birch, *Betula* spp. (Betulaceae): *Elasmostenus interstinctus* (Linnaeus), *Elasmucha grisea* (Linnaeus) (Acanthosomatidae) and *Kleidocerys resedae* (Panzer) (Lygaeidae). Several *Physatocheila dumetorum* (Herrick-Schaeffer) (Tingidae) were found on hazel, *Corylus* spp. (Betulaceae), which I usually find on hawthorn, *Crataegus* spp. (Rosaceae). A singleton of *Cyphostethus tristriatus* (Fabricius) (Acanthosomatidae) was found sweeping grass, which I would normally expect on conifers. On a fir, *Abies* spp. (Pinaceae), I took a singleton of *Corizus hyoscyami* (Linnaeus) (Rhopalidae), which I have previously found on Geraniaceae.

I would not regard any particular one of these odd occurrences as remarkable, as such encounters happen from time to time. (For instance, I have taken *C. hyoscyami* on conifers before.) However, for several to occur together in a single visit is remarkable, and I wonder if the above species were forced onto unusual hosts by the felling and clearance.

**SPECIES ACCOUNTS FOR THE HEMIPTERA-HETEROPTERA REPORTED AS NEW TO
THE BRITISH ISLES SINCE SOUTHWOOD & LESTON (1959): 1959 TO 1969**

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Introduction

It is now three years since I wrote an addendum to Southwood & Leston (1959), the standard text on the Hemiptera-Heteroptera of the British Isles, listing the additions and changes in nomenclature that have occurred since its publication (Ryan, 2012). I now propose to provide species accounts for the bugs not mentioned in this text, in a series of articles of which this is the first. These will be presented in chronological order, by year of publication of the species as new to the British Isles, and will be based upon details published in the national entomological literature. This article covers the species reported as new between 1959 and 1969.

The numbering of the species follows Ryan (2012), which places them within the taxonomic sequence of Southwood & Leston (1959). Details of identification are given, but figures from published articles, such as those depicting genitalia, are not reproduced. A full set of keys is provided by Nau (2012) and Kirby (2015). Images for the bugs may be found at the British Bugs website (www.britishbugs.org.uk) and elsewhere on the internet, such as Flickr (www.flickr.com). County distribution maps for the new species are given in Figure 1. References are not cited within the species accounts, to avoid cluttering the prose. The evidence base for the accounts is instead given in the annotated bibliography.

Species accounts

075A. *Nysius ericae* (Schilling) (Lygaeidae)

In the same year as the publication of Southwood & Leston (1959), G. E. Woodroffe reported that specimens standing as *Nysius thymi* (Wolff) in British collections comprised two distinct species: the true *N. thymi* and *Nysius ericae* (Schilling). The latter had not previously been recorded from the British Isles, but was found to be the commoner form of the two, and all previous records for *N. thymi* therefore became doubtful.

The species is associated with sparsely vegetated ground, such as coastal cliff-tops, dunes and wasteland, where it may be found on the ground or by sweeping members of the Asteraceae. It has been recorded from many counties in England and Wales, and also from Scotland. Adults have been found in July, August and September.

The two species differ in that *N. thymi* is larger and more reddish, whereas *N. ericae* is smaller and darker. They can be separated by reference to the male genitalia. The females can be separated by the nature of the pubescence on the veins of the hemelytra, being longer and more erect in *N. ericae*.

100A. *Pterotmetus staphyliniformis* (Schilling) (Lygaeidae)

This bug was first found in the British Isles by G. E. Woodroffe in May 1962 on the Cornish coast between Sennen Cove and Cape Cornwall. The animal was taken running on bare, stony ground above the cliff edge. Multiple colonies were found over several miles.

There have been many subsequent records of the *P. staphyliniformis* from this short stretch of cliff tops, in areas of sparse vegetation, from each month between April and September. It is not known from anywhere else in the British Isles.

The insect resembles a giant *Macroderma microptera* (Curtis) (Lygaeidae) (4.5-5.0 mm long, compared with less than 4.0 mm for *M. microptera*). It is more elongate (nearly four times as long as broad, compared with three times for *M. microptera*) and has longer legs and antennae. The anterior femora of *P. staphyliniformis* have several small black spines beneath (only bristle-like hairs in *M. microptera*). Obviously, given the distinctive appearance and extremely localised distribution of *P. staphyliniformis*, there is no reason to doubt previous records of *M. microptera*.

126A. *Eremocoris abietis* (Linnaeus) (Lygaeidae)

This species was first identified in the British Isles by G. E. Woodroffe in 1962, amongst specimens standing as *Eremocoris fenestratus* (Herrich-Schaeffer) in collections. All were from Scotland, apart from two taken in Kent. The specimens of genuine *E. fenestratus* came from Buckinghamshire and Surrey, and old records for this species should be confirmed by tracing to an authenticated specimen.

The Kent *E. abietis* have been found in heaps of hedge trimmings, in moss and under heather (Ericaceae), in the spring and autumn. The Scottish bugs have been reported from under common juniper, *Juniperus communis* L. (Cupressaceae), bearberry, *Arctostaphylos uva-ursi* (L.) Spreng. (Ericaceae), and crowberry, *Empetrum nigrum* L. (Ericaceae), and in *Rhacomitrium* moss, with both adults and nymphs occurring in July. The species presumably hibernates as an adult.

E. abietis and *E. fenestratus* may be distinguished by the nature of the hairs on the hind tibia. In addition to short, semidecumbent hairs, present in both species, *E. fenestratus* also has long erect hairs, about equal to the tibial width.

093A. *Megalonotus sabulicola* (Thomson) (Lygaeidae)

This animal was once regarded as a subspecies of *Megalonotus chiragra* (Fabricius). Its elevation to specific rank was reported in the British literature in 1963 by T. R. E. Southwood, in agreement with continental authorities. Since both species are widely distributed in the British Isles, previous records for *M. chiragra* are of doubtful identity, unless the particular subspecies is stated.

M. sabulicola occurs in sandy localities, and its scattered county distribution, from Kent in the south-east to Cornwall in the west and Yorkshire in the north suggests that it is likely to occur in many counties from which it has yet to be recorded. Published records are for May, July and August, and the species probably overwinters in the adult state, like *M. chiragra*, laying eggs in the spring.

The species differs from *M. chiragra* in that the red and brown portions of the appendages of the latter are coloured yellow. *M. sabulicola* is smaller and there are differences in the male claspers. The separation can be difficult, given the variation between individuals.

378A. *Charagochilus weberi* Wagner (Miridae)

This bug was first recognised in the British Isles by G. E. Woodroffe in 1965, from specimens taken sweeping the margins of rides in Pamber Forest, Hampshire in September 1959. During subsequent visits, Woodroffe found *C. weberi* in the spring as well as the autumn, and was able to associate it with the seed-heads of common cow-wheat, *Melampyrum pratense* L. (Orobanchaceae), but only in shady situations. In more open situations, the plant was not found to support the insect.

There are only two other published records of this species in the British Isles, one of uncertain location (probably Kent), which was found beating hazel, *Corylus* spp. (Betulaceae), and another recently published for Hertfordshire, without further details (not shown in Figure 1).

The bug is similar to *Charagochilus gyllenhalii* (Fallén), but is larger (>3.8 mm, rather than <3.8 mm) and has longer legs and antennae. Typically, the membrane of the hemelytra is not angled downwards, as it is in *C. gyllenhalii*. Given the apparent rarity of *C. weberi*, it is unnecessary to regard previous records for *C. gyllenhalii* as unreliable, despite the similarity of the two species.

285A. *Monosynamma maritimum* (Wagner), formerly *Monosynamma maritima* (Wagner)285B. *Monosynamma sabulicola* (Wagner) (Miridae)

These two species were added to the list for the British Isles in 1967 when G. E. Woodroffe reviewed the status of this complex genus in Britain, following the work of continental authorities. He found three species amongst British material, the above two new species, and the existing *Monosynamma bohemanni* (Fallén). *M. sabulicola* was found to be the more widely distributed, with *M. bohemanni* and *M. maritimum* recorded only from single counties, Surrey and Kent respectively.

The genus is associated with willows, in particular creeping willow, *Salix repens* L. (Salicaceae), on coastal dunes and in quarries, and adults have been found in the months June, July, August and November. *M. sabulicola* has now been recorded from nine counties in England and Wales, but no additional country records have been reported for *M. bohemanni* and *M. maritimum*.

Woodroffe experienced difficulty in finding objective criteria for separating the species, and had to rely upon two measurement ratios (width of pronotal base and head; and length of A3 and width of

vertex) and the use of a scatter diagram. He stated that confident determinations of species can only be made from a series of specimens. Subsequently, B. S. Nau has expressed doubt over this means of separation, and suggested that *M. sabulicola* and *M. bohemani* may not be distinct species.

421A. *Teratocoris caricis* Kirkaldy (Miridae), formerly *Teratocoris elegans* Woodroffe

This species was first reported from the British Isles by G. E. Woodroffe in 1967, from material swept in a marsh at Kinkara, near Aviemore, Inverness-shire in September 1966. Several specimens were taken, in company with *Teratocoris saundersi* Douglas & Scott. A subsequent examination of British collections found more of the new species, standing as *T. saundersi*. All were from Scotland, apart from a single specimen from Westmoreland.

The insect is associated with sedges (Cyperaceae) and rushes (Juncaceae), as are other members of the genus, in freshwater marshes; and a specific association with slender tufted-sedge, *Carex acuta* L, has been reported. Published records are for the months of June and July, and there have been additional county records from Northumberland and Caernarvonshire (the latter not shown in Figure 1). Since *T. caricis* is not generally distributed over the British Isles, and is a seldom-encountered insect, the existing county records for the common *T. saundersi* are probably reliable. However, it will be interesting to see if the two species have different distributions in Scotland, when detailed maps for this country are eventually published.

T. caricis can be distinguished from *T. saundersi* by the shorter pubescence of the former species on the first antennal segments and the hind femora. The two species can be easily separated by examination of the male genital aperture.

Annotated bibliography

075A. *Nysius ericae* (Schilling) (Lygaeidae)

Woodroffe (1959). Specimens standing as *Nysius thymi* (Wolff) in British collections in fact comprised two distinct species: the true *N. thymi* and *Nysius ericae* (Schilling). The latter had not previously been recorded from the British Isles, but was found to be the commoner form of the two. Woodroffe observed that *N. thymi* is larger and more reddish and is associated with mats of thyme, *Thymus* spp. (Lamiaceae), growing on sand, usually coastal dunes. In contrast, *N. ericae* is smaller and darker, and occurs on waste land, rocky slopes and cliffs, and sandy areas. The two species can be separated by reference to the male genitalia, which are figured by Woodroffe. A list of confirmed county records is given for both species.

Massee (1962). Rare in Kent.

Woodroffe (1963). Earlier records for *N. thymi* are unreliable. Reported both species from the Pembrokeshire coast, *N. ericae* on cliff-tops and *N. thymi* among thyme on sand dunes, late August or early September 1963.

Woodroffe (1966). Extremely abundant on rocky cliffs and headlands in the Isles of Scilly in the second half of August 1964/65. *N. thymi* was not found.

Kirby (1984b). Taken at several demolition sites in Derby in 1982, in areas of where low plants were giving incomplete ground coverage.

Morgan (1987). Taken in a Rothamsted light trap in Bangor, Wales.

Hollier (1987). Swept from a sparsely vegetated part of Mitcham Common, Surrey.

Denton (1997). Abundant on the ground at Oakhanger, North Hampshire (VC12).

Porter (1997). Large number on sparsely vegetated ground at North Woolmer, North Hampshire on 13 September 1996.

Judd (1998). Adults and nymphs taken on 25 August 1993 from a coastal plateau of bare soil and chemical slag in the process of plant colonisation at Flint Marsh, Flintshire (VC51).

Dolling (2003a). Identification key to *Nysius* spp. Females can be separated from *N. thymi* by the nature of the pubescence on the veins of the hemelytra, being longer and more erect in *N. ericae*. *N. ericae* is most frequently associated with habitats with bare ground (yellow dunes, stubble fields, cinder tracks).

Dolling (2003b). Sea mayweed, *Tripleurospermum maritimum* (L.) W. D. J. Koch (Asteraceae), teeming with *N. ericae*, on East Yorkshire coast.

Widgery (2010). Swept from arable weeds and yarrow, *Achillea millefolium* L. (Asteraceae), in East Gloucestershire, on 31 July 2010.

Judd (2011). Listed for Cheshire.

Ryan (2013). Twelve adults beaten from member of Asteraceae on 1 August 2010 and seventeen swept from dunes on 11 August 2010, on West Sussex coast.

Kirby (2015). Figures the male genital capsules and claspers of *N. thymi* and *N. ericae*.

100A. *Pterotmetus staphyliniformis* (Schilling) (Lygaeidae)

Woodroffe (1962a). First found in Britain in May 1962 on the Cornish coast west of St Just. The animal was taken running on bare, stony ground above the cliff edge. Multiple colonies were found over several miles along the cliffs between Whitesand Bay and Cape Cornwall. In each case the bug was in the company of the black ant, *Formica fusca* Linnaeus (Hymenoptera: Formicidae). The bug resembles a giant *Macroderma microptera* (Curtis) (Lygaeidae) (4.5-5.0 mm long, compared with less than 4.0 mm for *M. microptera*). It is more elongate (nearly four times as long as broad, compared with three times for *M. microptera*) and has longer legs and antennae. The anterior femora of *P. staphyliniformis* have several small black spines beneath (only bristle-like hairs in *M. microptera*).

Woodroffe (1966). Taken on cliffs north of Whitesand Bay on 30 September 1964.

Kirby & Lambert (1989). Reported from Sennen Cove, June 1987.

Alexander (2000). Under a heather mat on an outcrop, Boscregan Cliff, West Cornwall on 5 May 1999.

Alexander (2008). In the British Isles, only known from a single site in West Cornwall, the coast between Sennen Cove and Cape Cornwall. Found on cliff tops in areas of sparse vegetation, in April, May, June, July, August and September.

Kirby (2015). Concurs with Woodroffe (1962a) on identification.

126A. *Eremocoris abietis* (Linnaeus) (Lygaeidae)

Woodroffe (1962b). First found in Britain amongst specimens standing as *Eremocoris fenestratus* (Herrich-Schaeffer) in collections. All were from Scotland, apart from two taken in Kent. The specimens of genuine *E. fenestratus* came from Buckinghamshire and Surrey. Woodroffe distinguishes the two species by the nature of the hairs of the hind tibia. In addition to short, semidecumbent hairs, present in both species, *E. fenestratus* also has long erect hairs, about equal to the tibial width.

Massee (1962). Reports the Kent *E. abietis* to be found in heaps of hedge trimmings, in moss and under heather (Ericaceae), in the spring and autumn, hibernating as an adult.

Woodroffe (1965a, 1971 & 1973). Reports that Scottish bugs are found under common juniper, *Juniperus communis* L. (Cupressaceae), bearberry, *Arctostaphylos uva-ursi* (L.) Spreng. (Ericaceae), and crowberry, *Empetrum nigrum* L. (Ericaceae), and in *Rhacomitrium* moss, giving county records of Inverness-shire, Aberdeenshire and Sutherland. Both adults and nymphs were found in July.

Kirby (2015). Concurs with Woodroffe (1962b) on identification.

093A. *Megalonotus sabulicola* (Thomson) (Lygaeidae)

Southwood (1963). Concluded that this form could no longer be regarded as a subspecies of *Megalonotus chiragra* (Fabricius) and it was elevated to specific rank, in agreement with continental authorities. *Megalonotus sabulicola* (Thomson) is smaller than *M. chiragra*, and the brown or reddish portions of the appendages of the latter are coloured yellow in the former. There are differences in the male clasper, figured by Southwood. *M. sabulicola* is restricted to sandy locations in Britain, and gives records for Suffolk (Sizewell and Tuddenham), Kent (Deal, New Hythe, East Malling and Camber Sands) and Cornwall (Lizard).

Massee (1962). Reports the bug as very local, in association with *M. chiragra*, with Kent records for East Malling, Darent Wood, Greatstone and Isle of Sheppey.

Kirby (1984a). Taken beneath heather on sandy heath near Sandringham, Norfolk on 15th July.

Kirby & Lambert (1986). Reported from the Breckland.

Allen (1993). Two records, from Kent (Deal) and East Sussex (VC14) (Rye Harbour). [The latter record overlooked by Ryan (2014a & 2014b).]

Kirby (1994). Two records from Northamptonshire (VC32), Peterborough on 7 July 1992 and Bainton Pits 9 August 1992.

Kirby (1997). Taken in a garden mercury vapour trap in Peterborough (VC32) on 17 August 1996.

Brooke & Nau (2005a & 2005b). Taken at Sandy on the Bedfordshire Greensand, on 27 May in sandy, south-facing, sparsely vegetated areas.

Dolling (2014). Taken on coastal dunes near Kilnsea, East Yorkshire (VC61) on 20 August 2013, in company with *M. chiragra*.

Kirby (2015). Can be difficult to separate from *M. chiragra* and *Megalonotus emarginatus* (Rey), the three species being variable in size, shape, colouration and degree of wing development, and all can occur together. Concurs with Southwood (1963) on the colour differences of hind tibia.

378A. *Charagochilus weberi* Wagner (Miridae)

Woodroffe (1965b). Reports finding this species as new to the British Isles sweeping the margins of rides in Pamber Forest, Hampshire in September 1959. During subsequent visits, Woodroffe found *C. weberi* in the spring as well as the autumn, and was able to associate the insect with the seed-heads of common cow-wheat, *Melampyrum pratense* L. (Orobanchaceae), but only in shady situations. In more open situations, the plant was not found to support the insect. The bug is similar to *Charagochilus gyllenhalii* (Fallén), but is larger (>3.8 mm, rather than <3.8 mm) and has longer legs and antennae. Typically, the membrane of the hemelytra is not angled downwards, as it is in *C. gyllenhalii*.

Massee (1964). Found beating hazel, *Corylus* spp. (Betulaceae), on 20 June 1964. [The location of the record is not stated, but it is likely to be somewhere in Kent, given the author's association with this county.]

Nau (2012). Concurs with Woodroffe (1965b) on identification.

Gray (2015). Record for Hertfordshire, with no further details.

285A. *Monosynamma maritimum* (Wagner), formerly *Monosynamma maritima* (Wagner)

285B. *Monosynamma sabulicola* (Wagner) (Miridae)

Woodroffe (1967a). Reviewed the status of this complex genus in Britain, following the work of continental authorities. He found three species amongst British material, the above two new species, and the existing *Monosynamma bohemanni* (Fallén). *M. sabulicola* was the more widely distributed, with *M. bohemanni* and *M. maritimum* recorded only from single counties: Surrey (Virginia Water) and Kent (Deal and Dungeness), respectively. The genus is associated with creeping willow, *Salix repens* L. (Salicaceae). Woodroffe experienced difficulty in finding objective criteria for separating the species, and had to rely upon two measurement ratios (width of pronotal base and head; and length of A3 and width of vertex) and the use of a scatter diagram. He stated that confident determinations of species can only be made from a series of specimens.

Woodroffe (1962c). *M. maritimum* (as *M. bohemanni*) recorded on 7 July 1962 on creeping willow in a sand-pit at Virginia Water, Surrey. This was the second inland locality for the genus, which is normally found on coastal dunes.

Kirby (1984c). Reported *M. sabulicola* from *S. viminalis* L. x *S. fragilis* L. on 30 June 1981 and 20 June 1982 beside a flooded gravel pit in Derbyshire.

Whitehead (1993). Reported *M. sabulicola* from fixed dunes in South Lancashire on 25 August 1987 and 5 August 1990.

Nau (2000). Reported *Monosynamma* from gravel pits in Bedfordshire on *S. alba* L. on 3 August 1997, 23 August 1981 and 5 November 1981. Using Woodroffe's scatter diagram, these were identified as a mixture of *M. sabulicola* and *M. bohemanni*, and Nau questions whether these two species are distinct. [This county record was not included in Ryan (2014a & 2014b).]

Campbell (2004). *M. sabulicola* reported from Watsonian Oxfordshire and Berkshire.

Judd (2011). *M. sabulicola* listed for Cheshire and Lancashire.

Nau (2012). Gives graphical depiction of the combined ratios for the three species.

421A. *Teratocoris caricis* Kirkaldy (Miridae), formerly *Teratocoris elegans* Woodroffe Woodroffe (1967b). First report from the British Isles, from material swept in a marsh at Kinkara, near Aviemore, Inverness-shire in September 1966. Several specimens were taken, in company with *Teratocoris saundersi* Douglas & Scott. A subsequent examination of British collections found more of the new species, standing as *T. saundersi*. All were from Scotland (Inverness-shire and Perthshire), apart from a single specimen from Westmoreland. The insect is associated with sedges (Cyperaceae) and rushes (Juncaceae), as are other members of the genus, in freshwater marshes. *T. caricis* can be distinguished from *T. saundersi* by the shorter pubescence of the former species on the first antennal segments and the hind femora. The two species can be easily separated by examination of the male genital aperture, as figured by Woodroffe.

Woodroffe (1968). Reported the insect as being specifically associated with slender tufted-sedge, *Carex acuta* L, during a return visit to Inverness-shire in June 1967.

Kirby & Lambert (1992). Recorded from Perthshire on 29 & 30 July 1990.

Kirby (1994). Recorded from Northumberland on 15 June 1992.

Howe (2007). Recorded from Caernarvonshire. [Overlooked by Ryan (2014a & 2014b).]

Nau (2012). Concurs with Woodroffe (1967b) on pubescence length differences.

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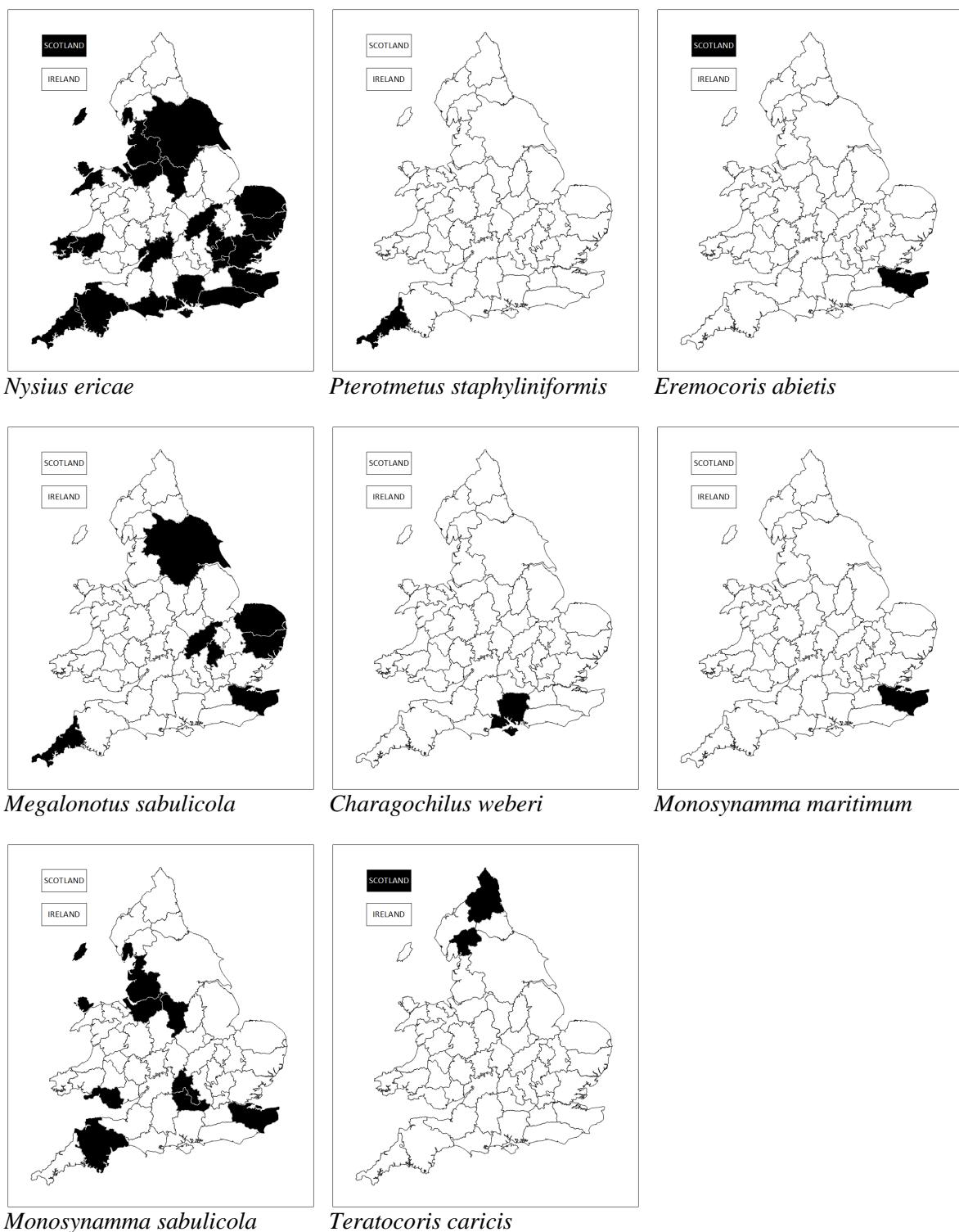


FIGURE 1. County distribution maps from Ryan (2014b).